FEBRUARY 1951

# FIREMEN

FIFTY-FIFTH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

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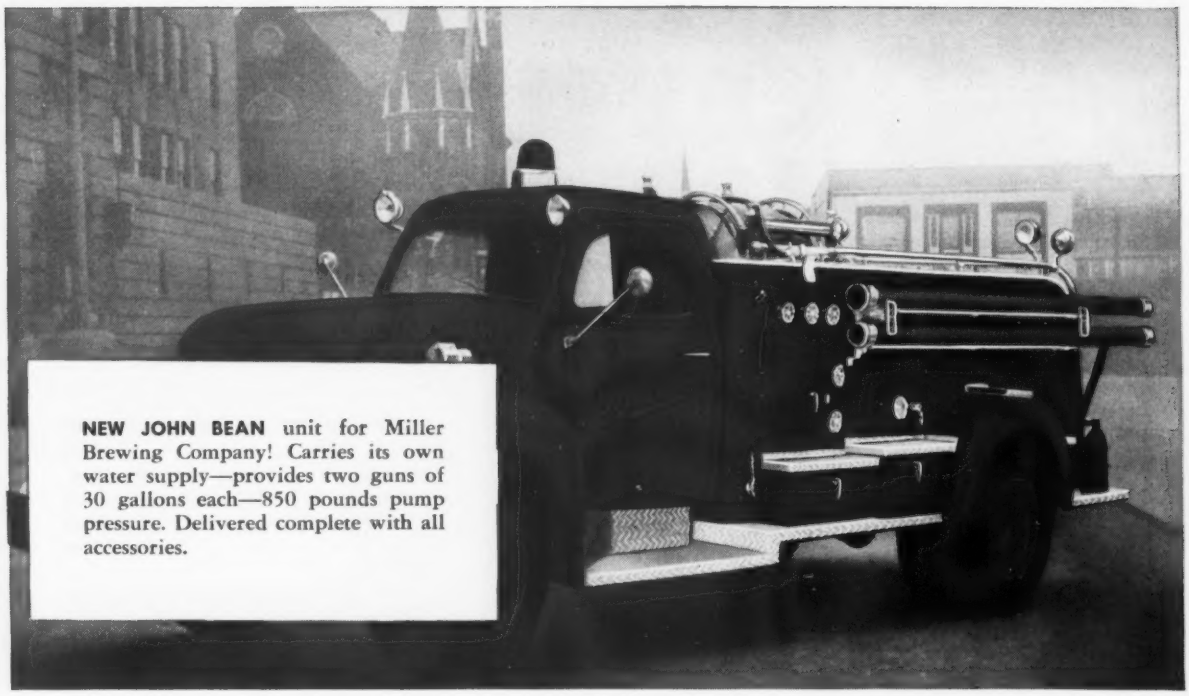

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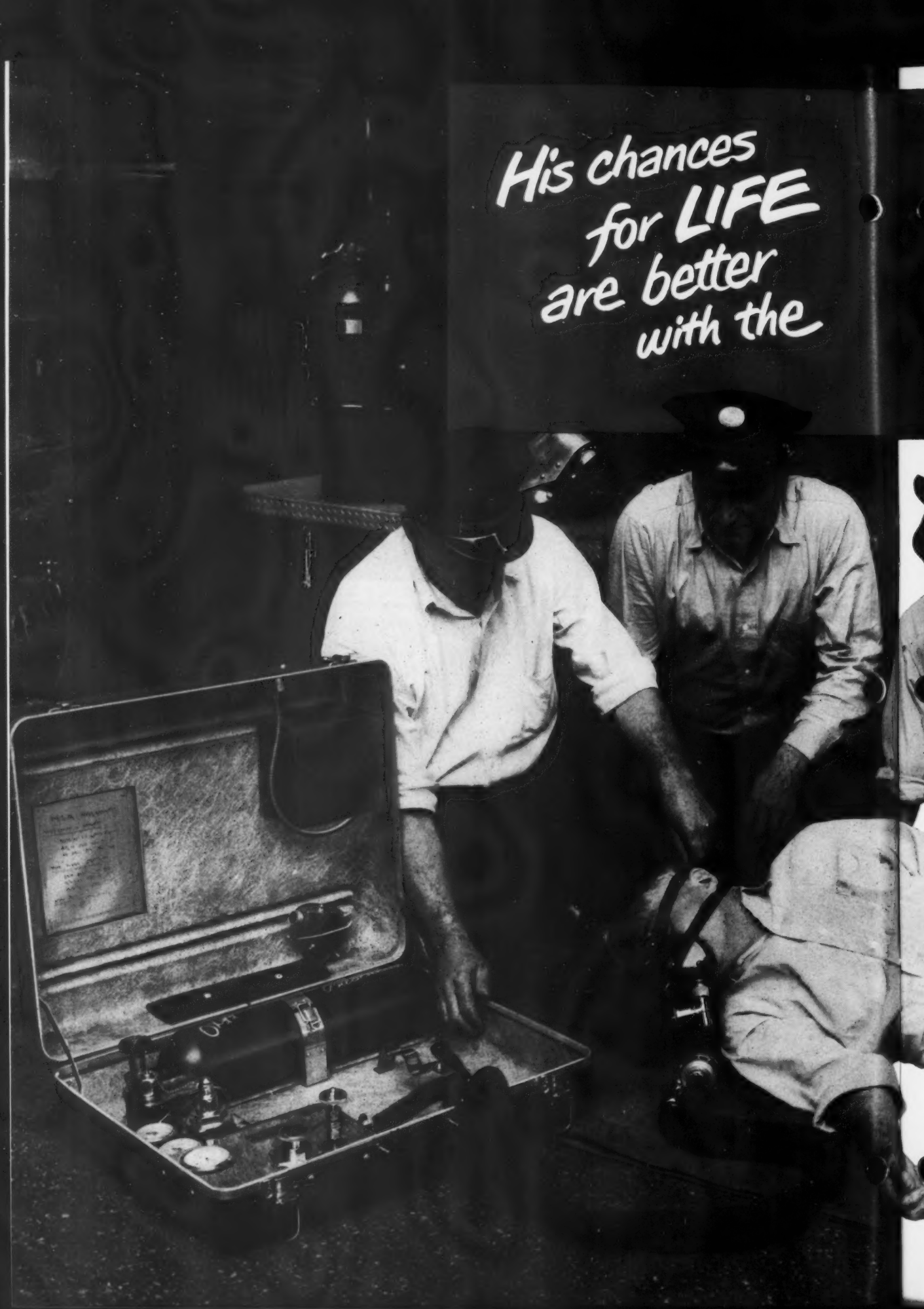
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# Firemen

Volume 18 Number 2

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**Cover Picture**

The cover picture shows the big blaze in Evansville, Indiana, on the morning of January 4. Chief Clarence Bessemier's preliminary estimate of damage mentioned a multi-million dollar sum, as eight buildings were destroyed or damaged.

Several Indiana and Illinois departments assisted the Evansville fire fighters. Few cities have sufficient fire fighting equipment to fight such large fires unaided. This is one reason why mutual aid is so important. One of the greatest deficiencies in the average department is the lack of sufficient heavy stream devices such as turret or monitor nozzles and ladder pipes capable of combining the capacity of two or three hose lines. It would be desirable to have a fixed or portable turret nozzle for each pumper and each ladder company equipped with heavy stream devices.

Of course, one or more unfavorable circumstances are behind almost every abnormal fire loss. But, as shown in a study published in the January, 1951, NFPA QUARTERLY, leading contributing factors are delayed discovery and alarm, lack of automatic detection and automatic sprinkler equipment, large areas of combustible buildings deficient in exposure protection and inadequate fire fighting facilities.

**Advertising Council**

Fire prevention recently enlisted a new, powerful ally when the Advertising Council agreed to conduct a professional advertising campaign of national scope for the National Fire Protection Association in an effort to reduce needless loss of life and property by fire.

Already a million dollars worth of advertising space has been provided with more than half the Nation's newspapers participating. The NFPA is underwriting the cost of the materials used and NFPA Public Relations Manager, Melvin R. Freeman, is serving as a consultant in the campaign. As shown in the December, 1950, FIREMEN pictures, bulletins, cartoons, etc., carry the message "Don't Gamble with Fire!" which is a current theme of the campaign. Free mats for newspaper publicity in this home fire prevention campaign are available from The Advertising Council, Inc., 25 West 45th Street, New York 19, New York.

**IAFC Committees**

Chief John C. Alderson of Los Angeles, President, International Association of Fire Chiefs (also a director of NFPA) has appointed two very important new committees for the IAFC. The first is a Fire Prevention Committee headed by IAFC Executive Secretary Jay W. Stevens of California. This is the first time that the IAFC has had a fire prevention committee. Chief Stevens has already toured the country and conferred with the heads of the various sectional organizations of IAFC regarding a far-reaching program in which every fire chief in the United States and Canada will be asked to actively participate. In addition, the program will attempt to enlist the aid of various prominent national organizations that can reach every segment of the population. There will be a specific program outlined for each month of the year. The goal is to reduce the U. S. fire losses by at least $100,000,000 in 1951. This is a very worthwhile task but a difficult one as declining dollar values help to swell fire loss figures.

The other new committee is to study the salaries of fire chiefs and is headed by Chief William Fitzgerald of Seattle. This is a most important committee as too many chiefs receive salaries that would scarcely attract skilled labor in other fields of endeavor. A good pay scale is needed to attract the right men to the fire service and in many communities there is so little spread between fire fighters in the ranks and the man who is responsible for the entire department that no satisfactory upgrading of the subordinate rank is possible. When the many qualifications that go into the making of a successful fire chief are evaluated and presented to the public, there can be little doubt that the entire fire service will be elevated and benefited. Fire fighters have to compete with other public servants for a share of the municipal dollar. They should take a leaf from the book of the school teachers who have won nation-wide recognition, sympathy and financial remuneration by telling their story to the public. Fire prevention is the fire department's greatest opportunity to meet the folks who pay the salaries and buy the apparatus.

# "Fire Effects of Bombing Attacks"

*A publication with the above title is NSRB Document 132, consisting of a 45-page report in two sections. Section I, covering "Fire Warfare in World War II" with descriptions of fire warfare on German cities, fire warfare on Japanese cities, and fire from atomic bomb attacks in Japan is digested in this article. Section II discusses the principal factors involved in fire susceptibility of American cities and discusses factors having the greatest influence on fire spread, contributing factors to fire initiation and spread, and weather factors. This section will be covered in a future issue of* FIREMEN.

*The complete text is available from the Superintendent of Documents, U. S. Government Printing Office, Washington D. C., for 15 cents. The publication covers in part material previously presented in* FIREMEN *and in the 262 page book,* FIRE AND THE AIR WAR. *The book is available for those who wish to study the subject in detail. (Order from National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., $4.00.)*

THE enormous effectiveness of fire as a weapon of war was demonstrated in World War II. Structural damage caused by fire accounted for 80 per cent of the total damage to cities attacked by airborne weapons. The great fire attacks on the cities of Germany and Japan were scientifically planned with emphasis placed on the susceptibility of the target and the type and quantity of munitions necessary to produce maximum damage. The lessons learned from these attacks and later from the atomic bomb attacks of Hiroshima and Nagasaki should provide valuable guidance to planners in designing measures to minimize the effects of fire damage to American cities in any future war.

It can be assumed that no area in the United States will be immune from possible attack because of its situation alone. The efficacy of the fire fighting services as a major arm of civil defense must be determined by the degree to which they will be able to lessen the fire damage effects of bombing.

**Fire Warfare on German Cities.** Complete appraisal of the fire damage in German cities may never be made. The best figures for the total damage due to high explosive and incendiary bombs were compiled from aerial surveys made by the British Air Ministry. Although admittedly incomplete, records of the principal attacks on most cities were included. Of the 49 cities studied, 39 per cent of the individual dwelling units (2,164,000 out of a total of 5,554,500) were seriously damaged.

*From "Fire and the Air War"*

**A German picture showing the conditions of streets in a fire storm area of Hamburg just after an attack. The buried vehicles are fire trucks which had to be abandoned due to the heat. This street was essentially a flue filled with flames and flying brands.**

Both high explosive and incendiary bombs were used in the great attacks on German targets by the U. S. Army Air Force and the Royal Air Force. The high explosive bombs varied in size from 100 to 2,000 pounds (with heavier bombs for special targets). The incendiary bombs varied from 4 to 100 pounds (with some 500-pound bombs used on industrial installations). (*See FIREMEN, December* 1945.)

**Pattern of German Cities.** The central portions of German cities had a building density (the ratio of roof area to ground area) of approximately 40 per cent and made excellent targets for incendiary attack. The average city contained at its core a mediaeval town which was closely built up with narrow and winding streets. The buildings were 3 to 5 stories high depending on the size of the city and averaged about 1,500 square feet in area. They had several tiers of attics strongly framed in timber.

The attacks on Hamburg (population 1,760,000) are illustrative and present a picture which was common in varying degrees in other German cities. Four major Royal Air Force attacks in July and August of 1943 destroyed 55 to 60 per cent of the city. Of the physical destruction 75 to 80 per cent was caused by fire. An area of some 30 square miles was damaged which included 12½ square miles completely burned out. Some 300,000 dwelling units were wiped out, and 750,000 were made homeless. At least 60,000 persons were killed.

**Characteristics of Fire Storms.** The great fires which gave rise to the term "fire storms" occurred in Hamburg, Kassel, Darmstadt, Dresden and perhaps to some extent in other cities which had airset fires over large areas.

Heavily built-up city areas were blanketed with a high density of incendiary and high explosive bombs. The density of the incendiary bomb fall was so great that individual efforts in combating incipient fires were fruitless. It was estimated that within 20 minutes after the first wave had attacked Hamburg, two out of three structural units were afire as a result of one or more incendiary bomb strikes.

In the absence of a strong ground wind the interacting fire winds set up many individual fires augmented by the effects of heat of radiation over intervening spaces, merged the aggregate blazes into one inferno with its own pillar or column (thermal) of burning gases which rose almost vertically. Over Hamburg this pillar was more than 2½ miles high and about 1½ miles in diameter. The term "fire storm" was used to describe these fires because in some cases the pillar (or thermal) struck a stratum of cold air condensing moisture on motes of soot and debris which fell in large black raindrops directly to leeward of the fire area.

The rapid burning of great amounts of combustible materials was accompanied by a corresponding consumption of air, causing an influx of new air at the base of the pillar. This onrush of air, or fire wind, reached gale-like proportions as it

headed toward the fire center. One and a half miles from the fire area of Hamburg this draft increased the wind from 11 miles per hour to 33 miles per hour. At the edge of the area, where velocities must have been appreciably greater, trees 3 feet in diameter were uprooted.

In these great German fires temperatures were raised to the ignition point of all combustibles and complete burn-out followed. The fires burned for nearly 48 hours before the areas cooled off sufficiently for them to be approached. No traces of combustible building materials or plant life could then be found. Only the brick building walls and a few large charred trees remained.

**Fire Spread.** In the absence of fire-storm conditions fires in German cities seldom spread beyond physical fire barriers such as fire walls and open spaces. It was indicated that under light-to-average weight attacks where fire conditions were normal, a 10-foot space between two brick buildings had about a 50 per cent chance of preventing fire spread, and a parapeted fire wall between them had about a 90 per cent chance. However, fire barriers were ineffective in the great fires where fire storms developed.

**Fire Defense Operations.** Defense against fire resulting from air attack was threefold: fire fighting by the residents of dwellings and apartments, fire fighting by organized fireguards, factory employee groups and civilian agencies, and fire fighting by the professional fire-fighting services.

Despite methodical and efficient preparation, a record of great fires which occurred in Germany reveals how ineffective fire-fighting forces were to control fires. The city of Hamburg is a case in point. The fire department there had a strength of 3,400 officers and men, 288 vehicles and 36 fire boats combatting the great fires which occurred between July 24 and August 3, 1943. Within 20 minutes after the dropping of the first bomb a great mass of fire was in progress which reached its climax 2 or 3 hours later. The fire drew air toward it from all directions with such velocity that firemen were unable to come within range with hose streams. Much of the fire equipment was lost, water supplies were disrupted, and being without radio communications the fire department found it exceedingly difficult to assign what units they had with any degree of efficiency.

**Casualties.** The principal loss of life in German cities occurred in the fire-storm cities. From somewhat incomplete data an estimate of 500,000 deaths was established by the U. S. Strategic Bombing Survey. This figure did not include the great loss of life reported in Dresden. Survey teams did not get into Dresden but fire department officials in other localities have stated that the loss of life was greater than that suffered in Hamburg.

**Fire Warfare on Japanese Cities.** Warfare by fire from the sky reached its climax in the campaign against the Japanese homeland. The Twentieth Air Force dropped 93,000 tons of incendiary bombs and 650 tons of high explosive and fragmentation bombs in 79 major missions directed against 64 cities. About 175 square miles of nearly 100 per cent damage resulted.

In contrast to the German experience, fire spread in Japan was so common within city blocks that it stopped only at the physical barriers of open streets; since there were no brick walls or parapets, the streets were the only breaks. (*See FIREMEN, August 1946.*)

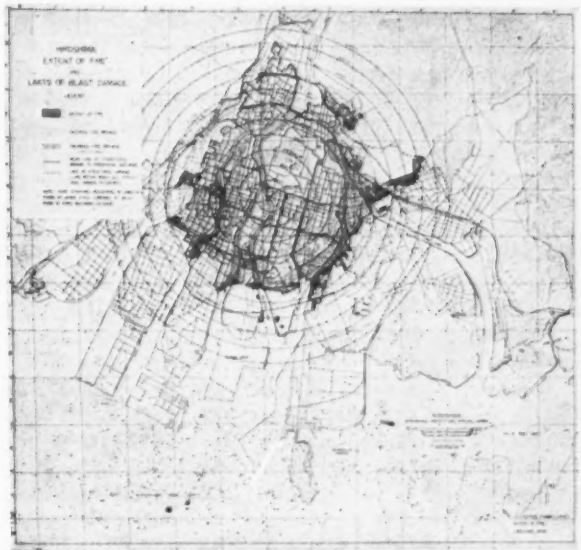
**Casualties.** It was estimated by the U. S. Strategic Bombing Survey that 168,000 persons died, 200,000 were seriously injured and nearly 8,000,000 persons were dehoused by the major incendiary attacks on Japanese cities.

The great attack on Tokyo March 9–10, 1945, alone accounted for half of the total deaths. This attack caused more deaths than either of the atomic bomb attacks, and more than the great Hamburg, Germany, attack. Probably more persons lost their lives by fire at Tokyo in a six-hour period than at any time in the history of man. The results were due principally to the element of surprise, dense population, highly-built-up combustible area and ignition during a high wind.

**Fires Caused by the Atomic Bomb.** The phenomenon of fire storm occurred in Hiroshima but not in Nagasaki. This was due probably to the flat terrain of Hiroshima and the high building density below the point of explosion of the bomb. (*See FIREMEN, September 1946.*)

Fire fighting in Hiroshima was effective only at the outer perimeter of the fire storm area and in 4 of the 58 fire-resistive buildings which were fire damaged. The public fire department and rescue units played a minor role in the extinguishment of the fires as 80 per cent of the firemen on duty had been killed or critically injured, 60 per cent of the public fire stations totally damaged, and 68 per cent of the fire trucks destroyed. As a result, only 16 pieces of fire equipment were available.

The exact number of dead and injured will never be known because of the confusion after the explosions. No sure count of even the pre-raid populations existed. Because of the decline in activity in the two port cities, the constant threat of incendiary attacks and the formal evacuation programs of the Government, an unknown number of the inhabitants had either drifted away from the cities or been removed according to plan. The U. S. Strategic Bombing Survey believes the dead at Hiroshima to have been between 70,000 and 80,000 with an equal number injured; at Nagasaki over 35,000 dead and somewhat more than that injured.



*From "Fire and the Air War"*

The fire area at Hiroshima. The dark shaded area indicates the extent of fire destruction. Circles mark 1,000-foot intervals from ground zero.

# MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

## Transfer of Firemen Within Fire Departments

IN fire departments consisting of several stations or companies, the necessity for having some stated policy or plan to handle the transfer of men from one unit to another has not always had the attention that the matter deserves. Volunteer firemen in general, join a "company" and in most cases remain with that same company throughout their entire span of service. Most paid fire departments have developed out of volunteer organizations and the intense loyalty given to company units by their members has been slow to die out in the paid fire service even though men join the "department" as municipal employees and are merely assigned to the company units where it is believed they can render the best service. Many fire departments have been faced with the necessity of gradually curbing company rivalry in the interest of overall efficiency. It was not many years ago that the aim of many company officers was to "beat in" another unit assigned to the same alarm and "take a fire" from the competitor. It was even known that certain chief officers had their own favorite companies that were given favored assignments at fires and were kept at better strength than other units in the same battalion. Such an attitude is rapidly passing out of the fire fighting service with the realization that every company must be able to perform at maximum efficiency and operate smoothly with other units to cover any vital position to which it may be assigned at a fire. Who could guarantee that a favored unit would be the first to arrive or would be the one to "get the fire"?

With the advance in the profession of firemanship it has been appreciated that a man who serves his entire career assigned to one station and to one type of company cannot be expected to have the broad basis of experience obtained by a brother fire fighter who has had both engine, truck, and rescue company assignments and has served in mercantile, manufacturing and residential districts and perhaps also in various special assignments such as the training division and fire prevention bureau. Such a man understands the many problems of the fire service and appreciates the need of cooperation between all units. He has been on the pipe in a tough spot waiting for the truckmen to ventilate and he has had the difficult job of opening up a "stinker" without the protection that the pipeman enjoys. He has fought brush and field fires in the suburbs and knows how exhausting they can be. He has "made the stairs" into a sub-basement of an old mercantile.

Because it is necessary to move men from unit to unit to fill vacancies caused by death, retirement, promotion, or by the creation of new units, it is important that a department have a policy for the transfer of men to new assignments that will appear fair to all members and will serve to improve the morale of the department. First off, where possible, transfers should be systematically planned and scheduled with reasonable advance notice to those concerned. They should never be punitive. Temporary emergencies can be met by short term details from one unit to another.

The morale of several large fire departments has been hurt recently by extensive series of transfers which the men felt to be punitive and which were reportedly so extensive as to break up fire company teamwork. Men accustomed to working together as a team of officer, operator, and hosemen, and having confidence in each other's ability to come through in a tight situation, suddenly have found themselves in strange surroundings and called upon to protect districts with which they had only a general familiarity rather than a detailed knowledge. When men find themselves transferred without warning to stations 5 to 15 miles from home, as has happened in some cities, they tend to assume that the transfers were punitive and designed to cause them to spend more time in travel to and from work.

THERE is no question that properly made transfers of personnel are advantageous and essential to the department. Men gain experience in all types of service necessary to become all-round firemen and officers. They obtain a general knowledge of the entire city which is necessary when companies are moved to cover vacated stations under emergency conditions. Transfers help to make a fair distribution of the more difficult assignments between all members. They help to prevent the cliques and favoritism that sometimes develop when members become entrenched in one berth. They provide experience in various types of company units and knowledge of the various districts of the community.

On the other hand where there is no general policy regarding transfers members may labor under a feeling of uncertainty that makes major commitments such as the purchase of a home difficult. Wholesale transfers made suddenly may break up teamwork and it may be undesirable to move more than one man on each platoon of a company at one time unless two incompatible men must be moved to restore harmony and to avoid favoritism. Even then it is often possible to merely change the tours of duty. A knowledge of alarm assignments, routes to boxes, location of hydrants, alleyways, etc., may be lost if a man is removed to a remote district. A knowledge and personal interest in the details of buildings in a district is lost with too frequent movement of fire company members.

The suggestion has been made by fire officers discussing this problem that fire departments having multiple stations might adopt a policy along the lines of the Navy tradition of fairly dividing service between sea and shore duty, only in this case it would be between companies in business and residential districts. It has been suggested that possibly two companies might be considered as "home" by each member, with the time fairly divided between a company in the residential district near where the member lived and one in a high value district. The division of time might be on a 6 months basis or on an annual basis, so that each member would get a fair portion of winter and summer service in each district. This would have the advantage of giving broader experience and of giving periods of relief from duty with companies with the most arduous duties.

It is becoming more generally recognized that not all of the older fire fighters and those less physically fit should be sent "to the sticks" or to residential areas with the hope that life will be just a little more tolerable for them. Actually, the greatest life loss from fire is usually in residential fires. Companies in residential districts usually are more

(*Continued on page 20*)

# Hotel Fire Safety

**From an address by R. E. Tiffin, Fire Marshal, Province of Saskatchewan, given at the NFPA Regional Conference, St. Paul, Minnesota, November, 1950**

IN Canada last year $65,918,776.00 worth of property was burned, 542 persons lost their lives in fires, and many times that number suffered ghastly burns and injuries. In hotels, apartment blocks and rooming house fires, 28 persons lost their lives. This disgraceful loss of life and property was a fine contribution to the ash heap — the result of neglect or carelessness. These figures indicate the magnitude of the problem of such fires. They measure its destructive force in lives and dollars. They answer the question, "Why do we need Hotel Fire Regulations and Inspections?"

A careful study of fires causing large loss of life proves beyond any doubt that the deadly products of combustion passing through vertical and horizontal openings, and enveloping the entire structure before the fire department arrived, were responsible for the great number of lives lost in hotel fires. Bitter experience has shown that if multi-story buildings, even if they are of fire-resistive construction, are to be made safe from a life standpoint in the event of fire, smoke and hot gases must be kept out of all vertical and horizontal openings.

In the building codes of other years, it was not uncommon to require some stairways to be enclosed (because they were needed as exits), while other openings in the same building were allowed to be open. The smokeproof tower or properly enclosed stairway is a distinct aid to fire fighting in that it allows the firemen to approach closer to the actual seat of the fire as well as providing a protected area at each floor level from which to carry on their work. Hot gases from a fire tend to rise, and any vertical opening acts as a flue, serving the double function of increasing the draft on the original blaze and of spreading the fire to upper floors. The openings need not necessarily be large, since actual flame is not necessary for transporting fire from one point to another. Cases frequently occur where heated gases from a basement fire filter up into the attic through very small openings, filling the upper stories and attics with the products of incomplete combustion. Consequently, when a sufficiently high temperature is reached and extra oxygen is made available from any source, the entire mass bursts into flames with a puff, commonly called a back-draft. In fact, the normal course of events in a building of any height having unprotected vertical openings is such that the top story is usually damaged more severely than lower stories, even though the fire originated in the basement.

In our taller hotels the elevators will instinctively be used as the first and most natural means of exit, and to ensure that they will not be put out of order while the shaft is still livable, the elevator machinery should be enclosed in "fire-proof" compartments.

Contrary to the general opinion of hotelmen, enclosure of vertical openings is equally important in buildings of fire-resistive construction as it is in hotels built of frame construction. Suffocation and asphyxiation, rather than actual burns by contact with flames, are responsible for the great majority of deaths and injuries by fire.

"FIREPROOF" is a very re-assuring term when you do not know what it means. To say that a hotel is of "fire-proof" construction means that it has been designed to minimize the possibility of structural failure, due to fire. Had you been on the 19th floor of the LaSalle Hotel on the night of its great fire in June, 1946, you might have taken comfort in knowing that the fire could rage up to a temperature of 2,000 degrees Fahrenheit over a period of four hours before there could be any danger of failure in the supporting columns. That no one could have survived such an ordeal is beside the point. The hotel management could take comfort in knowing that, with the replacement of superficial decoration surfaces, the hotel would once again be ready for business.

The story of those hotel fires in which many lives are lost, follows a pattern which is so repetitious that certain conclusions seem inevitable. This is the general pattern: An area on the ground floor, a dining room, lobby or connecting store bursts into flame so rapidly that fire fighting equipment cannot prevent the first nearly explosive combustion. An enormous expansion of flaming gases creates its own draft, carrying smoke and fire up open stairways and elevator shafts. Each wall or shaft is like a chimney, except that the outlet at the top is safely sealed, but, holes in its sides lead into bedroom corridors. Temperature and atmospheric pressure in bedroom corridors rise rapidly, pressing smoke, fire and carbon monoxide through transoms into bedrooms. Where windows leading to fire escapes are open, the pressure carries smoke and flames across these exits, making them deadly. No fresh air can come into any window, for the pressure is always outwards, except at the very base of the fire. Panic conditions are created in corridors, and illuminated exit signs are completely blackened out by thick, rolling clouds of smoke, which blanket the ceilings. Guests cannot find exit through these dangerous corridors. The result is death from suffocation or burns. The tragic story of death by fire in hotels flashes across the world. LaSalle Hotel, Chicago — 61 dead; Winecoff Hotel, Atlanta, Georgia — 121 dead; Barry Hotel, Saskatoon — 11 dead. These tragic fires shocked the country and resulted in renewed efforts to improve hotel safety.

When air is heated from 70 degrees Fahrenheit to 1,500 degrees Fahrenheit, which is a temperature quickly reached in many fires, the air expands to about four times its original

(*Continued on next page*)

HOTEL WINECOFF

ABSOLUTELY FIREPROOF EUROPEAN PLAN
200 ROOMS EACH WITH INDIVIDUAL BATH

LOCATED NEARER THAN ANYTHING TO EVERYTHING
ON ATLANTA'S MOST FAMOUS THOROUGHFARE
PEACHTREE STREET

ATLANTA 1, GA.

"Absolutely Fireproof" was a slogan on the stationery of the Winecoff Hotel before the worst hotel fire in our history claimed 121 lives on December 7, 1946.

*(Continued from page 11)*

volume. Added to this force is the expansion through combustion of any solid matter consumed, such as woodwork, furniture or paint, which expands to between one hundred and one hundred and fifty times its original volume. This expansion causes great pressure. It will break out adjacent windows, or extend horizontally, spreading the fire to other rooms, when it cannot rise. In most of our worst fires, open stairwells or elevator shafts have carried the suffocating gases to bedroom corridors, where the greatest loss of life has occurred. The enclosure of elevator shafts and stairwells is a very important safety measure.

The LaSalle Hotel fire gave a very instructive demonstration of these facts. The fire broke out and spread with extraordinary rapidity. The cocktail lounge was completely involved in flame within two minutes of the discovery of the fire. It swept into the lobby with great pressure before it blew the plate glass windows out of the cocktail lounge. Less than two minutes later, the whole lobby was ablaze and fire roared up the open stairways.

I believe that adequate fire detection and protection should be provided for the prompt discovery of fire, not only in hotels but in all other buildings where the public congregates.

For years, we have known the action of both the fixed temperature thermostat and the one operating on a rapid rise of heat greater than normal to the building. These have both given a degree of life and property protection far beyond the cost of their installation. I might add the majority of these devices bear the Underwriters' Laboratories label.

Recently another device has appeared on the market which operates by the use of the "electric eye" which gives the alarm on the slightest appearance of smoke. All these detection devices require proper maintenance and supervision.

With all these automatic devices available, I can see no reason why at least our large hotels should not be equipped with some means of automatic detection equipment in addition to the regular fire alarm system.

DURING the period of rapid growth of our cities, slow and poor transportation facilities resulted in concentration of business and hotel property and this, together with the increasing land value, gave very little alternative but for our hotels to go skyward to meet these conditions.

It has always been a fundamental principle of law that owners of buildings, hotels or otherwise, have a moral responsibility for providing every possible safeguard for their guests over and beyond those required by law. It is therefore incumbent that owners, every once in a while, have their premises inspected by one who is qualified by training and experience and has the backing of a suitable law.

An interior view of the burned out lobby of the La Salle Hotel. The high degree of combustibility of interior construction of this hotel was of enormous importance in the development of fire and resultant loss of life.

One important factor in hotel safety is the usual excellent care in maintenance and the continuous occupancy, which tends to lessen the number of fires and to prevent the spread of fires beyond control. However, there is a long list of hotel fires, some of which have been major catastrophes with serious loss of life. A study of these fires proves that poorly guarded common hazards are the principal fire causes, coupled with open shafts, inadequate exits and alarm systems which are the principal factors contributing to the rapid spread of fire and resulting in loss of life.

The great number of so-called fireproof hotels erected during recent years indicates to me that many hotel managements are keenly conscious of the value of non-combustible materials when building their hotels, but even with fire-resistive hotels there is need for many other considerations.

For that reason Fire Marshal John H. Craig, then Chairman of the NFPA Fire Marshals' Section, on December 5, 1946, appointed a committee to draft a model hotel fire safety law. Two days later, the Winecoff Hotel tragedy occurred, and the work of the committee was of immediate and urgent international importance. This committee cooperated with the American Hotel Association, International Association of Fire Chiefs, NFPA Safety to Life Committee, and invited constructive criticism of their draft from other interested or affected bodies. The Association of Canadian Fire Marshals called a special meeting in Winnipeg to discuss hotel regulations. The NFPA Guide for a Hotel Fire Safety Law was later passed at the next annual meeting of the ACFM as standard regulations for Canada. However, I am informed that no Province in Canada has officially adopted the Guide, with one exception and that is Saskatchewan.

The Guide for Hotel Fire Safety Law is an example of international uniformity in hotel laws which I think is most desirable. We have too much variety of laws under fire safety within our own country and certainly have too much variety in neighboring countries such as the United States and Canada. If one walks into a hotel in Saskatchewan or Quebec, Oregon or one of the Dakotas, where all hotels are very similar and people all the same, you want to be able to tell what the signs mean, where to get out, and that the alarm warning is for fire. We expect standardized means of exit and standardized methods of dealing with fire fighting. I think the model law provides something highly needed.

Modern building codes generally require fire-safe construction for new hotel buildings, but little is done to safeguard old

**NFPA Publications**

**Guide for Hotel Fire Safety Law**

18 pages, Fifty cents. ($35 per hundred)

**Fire Safety Precautions for Hotel Guests**

4 pages— ($2.00 per hundred)

buildings, on the theory that a building which was in accordance with all existing standards at the time of its erection should not be penalized by being required to make costly changes to comply with subsequent laws. This, in my opinion, is ridiculous. I believe the older hotels are our biggest worry.

We, in Saskatchewan, adopted the Model Hotel law, with a few minor changes, in July 1947, and we have found the majority of the hotel owners willing to provide the maximum of fire safety for their guests. However, the hotel owner or manager is not a fire protection engineer. We can't blame him if no architect or fire inspector has ever warned him of the danger of open stairs or highly combustible interior finish, or any of the other hazards mentioned in the Model Hotel Law.

My experience with hotelmen convinces me that many are intensely fire conscious and very desirous of obtaining every possible protection to human life. It has impressed upon my mind the fact that most present-day owners and operators of hotels are, in a sense, victims of circumstances in that at the time of construction or purchase, they fell heir to buildings and conditions which, it must be remembered, were permitted to be erected or operated by laws in effect at that time. Their hotel buildings could never have opened for business did they not comply with all structural features and requirements of the building code and all other applicable laws. Their position is very much the same as the patient who places faith in the prescriptions of his doctor and feels it unnecessary for him to supplement the doctor's advice by any further action on his part. Prior to the LaSalle, the Winecoff, and the Barry Hotel fires, the owners adhered to requirements laid down by law in their premises, and were sincere in their belief that through such compliance they were affording every possible protection for their guests. They felt the law and administrative officials would not let them operate an unsafe building, and it is a truthful statement that prior to these three fatal hotel fires, one rarely heard of any official action on the part of authorities in any part of the country requiring the closing of a hotel.

WHEN the Hotel Regulations came into force in Saskatchewan in 1947, there were very few, if any, enclosed stairways in Saskatchewan hotels. However, I am pleased to announce that at the present time, with the exception of a few two-story hotels, all hotels have their stairways enclosed. When the regulation governing enclosed stairways was first introduced, our inspection staff met with some opposition from the hotel management. When the reason for the enclosures was explained, we received very fine co-operation and, in the majority of cases, arrangements were made to immediately fulfill the requirements of the regulations. As I have already stated, hotelmen in the Province of Saskatchewan were victims of circumstances and we ran into many difficulties in trying to convert the conventional open wide stairwells into modern smoke and fire-resistant enclosures. In many instances, we had to modify the intent of the regulations somewhat as our regulations call for door and partitions having at least one hour fire resistance rating. In many buildings, we have accepted plaster board, flexboard and asbestos board construction which would not meet the one-hour fire resistance rating specification, as it was found in many cases that the construction of the remainder of the building did not warrant the one-hour rating type of construction. Under these circumstances, we were content with providing smoke and gas proof enclosures of such construction as to permit the escape of guests if the fire was discovered and an alarm sounded before it reached major proportions. In carrying out the requirements of the enclosed stairway regulations, we have asked that the stairway be enclosed in such a manner as to prevent the spread of smoke and hot gases from floor to floor. In the majority of cases, this was accomplished by replacing open bannisters with partitions and placing doors at the head of the stairway. We require that this door be of a self-closing type and swing in the direction of exit travel. In many instances, we have found that hotel owners who have gone to the expense of placing doors and enclosures on the stairwells are nullifying the purpose of such enclosures by blocking the doors open. I wish to point out at this time that the blocking of these doors in an open position is definitely contrary to the intent of the regulations and past experience has proven that any safety measure which depends upon the human element will fail at a time when they are most needed. It is therefore very important that these doors be kept closed at all times.

We have had hotel owners complain bitterly when asked to close stairways and other open shafts. In some cases, they appealed the order, but the order was upheld and they were finally forced to comply with our order. Several of these parties have since contacted me and remarked how well pleased they were now, and even went as far as suggesting we should have forced the issue ten years ago.

IT is true that most of the lives are lost in fires which individually claim only one or two victims and receive little public attention. It is only the major fire tragedies, in which large numbers of people are killed or injured, which receive general publicity and exert some influence for fire safety. Twenty-five lives lost in one fire make front page news items; twenty-five lives lost in individual fires receive little or no attention. Don't wait for a catastrophe to happen in your province or city, but rather gather your ammunition and immediately present your hotel regulations to your various law-makers.

Our hotel fire losses of life and property have become an international disgrace. We have led the world in seeking out causes and prevention for typhoid, tuberculosis and many other malignant plagues, yet we stand aside and let other nations of the world lead us against our common enemy "FIRE," which I believe to be more easily conquered.

The requirements for building appliances, devices and other hazards that will provide maximum protection against start and spread of fire are well known to fire marshals, and it is your responsibility as well as mine to work for uniform compulsory codes and to see that they are rigidly enforced.

This picture shows the Barry Hotel, Saskatoon, Saskatchewan, after the fire of December 8, 1946 in which ten men and a woman were asphyxiated by fire gases and seventeen persons were injured.

# Abuses of Electrical Devices on the Farm

By Earl E. Hotchin, Michigan State Association of Mutual Insurance Companies
Lansing, Michigan

ELECTRICITY has been one of the most important factors in changing the operation of the farm and the farm home. It has materially cut the amount of manual labor and made living conditions on the farm much more agreeable.

While it is a definite boon to the farmer in labor saving and comfort it is many times abused because it is so little understood. In most cases fire hazards have been created by mis-use of electricity because of the lack of understanding of electrical power and how it acts. Electricity unlike most items used on the farm can not be taken up in the hand or looked at to learn and judge its power. Education is needed to help eliminate the abuses.

Faulty use of electrical devices is by no means confined to the farm. It is just as prevalent in urban communities and for the same reasons — lack of understanding and of education in safe practices to prevent fire hazards.

Probably improper fusing is the most prevalent abuse. Instead of realizing that fuses in an electrical circuit are safety devices or valves, the farmer and average person consider them "nuisances" when they fail due to overload. Instead of realizing that there must be a basic reason for fuses "blowing," and that the cause should be located and corrected, the farmer and again — average person — thinks only of correcting the visual result.

If every farm and urban building owner or occupant realized that the normal circuit is designed to carry a certain amount of current safely without excessive heating and becoming hazardous, they would know that the fuse that "blows" is a danger signal calling their attention to the fact that they have overloaded that circuit and that the services of a competent electrician are needed to revamp their wiring.

MOST older buildings, whether barns, houses, or business establishments, are good examples of how electrical installations are allowed to become dangerous. Probably these buildings were wired for electricity to illuminate a few lights in each room. During the years with the development of the various electrical appliances and the means to purchase them, one after another device was installed until that old No. 14 wire circuit was subjected to a distinct overload. Then the 15 ampere fuses "blew" and sounded the danger signal. Consequently it was soon found that a larger fuse, a penny, or some other metallic material to carry the extra current, would eliminate the pesky fuse blowing. Without question many fires in the past years and at present are being caused by this practice.

Other misuses of electrical devices have come more recently into the farm picture. For example, consider the use of the heat lamp. Brooders for poultry and for animals have been built containing a heat lamp to produce a temperature more conducive to the well-being of the chick or young animal. Many farmers have learned about these devices and have built their own brooders and installed heat lamps. Unless these brooders are built so that they are substantial and safe and unless the wiring to the lamp, and the lamp itself, be so installed that they can not be damaged by an animal, distinct fire hazards are introduced. Particularly this is true with pig brooders. We all know how a pig uses its snout to investigate surroundings. In one instance a pig bit a lamp cord not only causing a short circuit but also electrocuting itself.

ELECTRIC motors are also devices that are mistreated. Farmers install motors in dusty and hazardous locations with little, if any, attention to regular cleaning and maintenance. Many of these motors are portable and consequently are equipped with a cord connection. Rough usage and moving impairs the safety of these cords. Many times the cords are not of the safe type in the first place. Sometimes I wish it were against the law to manufacture and sell stranded and twisted drop cord. Actually, it was never approved nor intended to be used for anything but short perpendicular drops for ceiling lights. and as supply conductors for portable equipment. Now that it is so easy to buy cord and attachments in any "10 cent store," it has become one of the greatest of fire hazards.

Another abuse of electrical devices on the farm is in the use of the electric lamp. Electric openings for lights are installed in hay mows, and in other places just as hazardous, without any protection. These lamps develop considerable heat and, especially if installed in a horizontal position, create a fire hazard by igniting the dust and debris which is bound to collect on them. Lamps installed anywhere that are subject to mechanical damage or to the accumulation of combustible debris should be protected by a safety globe or protector.

It is my belief that another feature of an electrical installation also is gravely neglected. While it is not an electrical appliance it plays a very important part in the safety of an electrical installation. I refer to grounding. I think it is advisable to ground all motors and devices where it is possible (I know of the loss of 5 valuable cattle which might have been saved if a motor frame had been properly grounded).

Many times what are supposed to be "grounds" are not grounds at all. I don't believe any person knows whether a ground will be effective unless he tests it with instruments. Soil conditions and other factors make a great deal of difference and only a test will show the efficiency of the grounding. A ground which is all right in wet seasons may not be any good in dry seasons.

THERE probably are other electrical appliances and devices which have been abused on farms but I believe that these are the major ones. In summing up, this subject resolves itself to the same solution as any other fire hazard. Fire prevention is definitely a subject which must be accompanied with an educational program. We in the fire prevention field still have a tremendous job facing us.

I do not think many people will deliberately create an electrical fire hazard if they understand hazardous conditions. We have a tremendous job to carry to people on the farms, and in urban communities as well, the story of what they are doing and how it may cause a hazard to life and property. It is my opinion that encouragement to programs of fire safety among the youth: 4H Clubs, future farmers, scouts and schools offer a wonderful opportunity for lessening of the farm fire loss.

Members of the 23rd Annual Fire Department Instructors Conference at the Memphis Municipal Auditorium.

# 23rd Annual FDIC at Memphis, Tennessee

THE 1951 Fire Department Instructors Conference held in Memphis, Tennessee, January 9-12, was the greatest FDIC to date. When registration closed, 950 men, interested in firemen training, had assembled from 38 states, the District of Columbia, and from Canada. This, the 23rd annual FDIC, was sponsored jointly by the Memphis Fire Department under Chief John C. Klinck and the Fire Prevention Department of the Western Actuarial Bureau of Chicago under Manager Richard E. Vernor. "Dick" Vernor served as conference chairman.

Visiting fire fighters were welcomed to Memphis by the Hon. Claude A. Armour, Commissioner of Fire and Police, the son of a retired Memphis fire captain. Chief Klinck at the opening session asked that "the best possible construction be placed on our efforts" but long before the conference was ended the Memphis department had earned the respect and gratitude of all the delegates.

The Memphis Fire Department again proved themselves to be hosts par excellence, serving luncheons each day to the hundreds of guests assembled in the vast dining hall of the municipal auditorium, staging a dance at the ballroom at the fair grounds, providing transportation for the visitors, furnishing men and apparatus for fire fighting evolutions staged at the fire department drill tower, and in staging the "FDIC Follies," a stage show presenting top-notch talent.

The four days and 46 topics of the FDIC program can no more be compressed into a brief report than can the Atlantic City bathing beauty extravaganza be adequately reported by a penny post card's line: "Wish you were here." One of the highlights was a panel on "Civil Defense and Atom Bombing" led by NFPA Chief Engineer Horatio Bond. Other important topics included: hospital fire safety, problems of paid and of volunteer fire department, respiratory protection, dry chemical fire extinguishers, smoke detection, plastics, wetting agents, aerial ladders, fire training centers, photography in the fire service and radiological monitoring. The total attendance was the highest on record and 22 percent above that of 1950.

(Below) The NFPA Committee on Firemen's Training met at the Claridge Hotel Memphis, January 7-8. Attending were (front row, l. to r.): John L. Thompson, Kentucky Inspection Bureau; W. Fred Heisler, Oklahoma A & M College; Robert F. Hamm, Director, Fireman Training, Indiana Rating Bureau; Vice Chairman J. W. Just, Director, Fire Service Extension, University of Maryland; Chairman W. A. Ross, U. S. Office of Education; Secretary Emmett T. Cox, Western Actuarial Bureau; Warren Y. Kimball, Editor, NFPA *Firemen* Magazine; Roi B. Woolley, Associate Editorial Director, *Fire Engineering* Magazine. (2nd row, l. to r.): Richard E. Vernor, Chairman FDIC, Chairman, NFPA Board of Directors, Manager, Fire Prevention Department, Western Actuarial Bureau; R. J. Douglas, Oklahoma A & M College; Chief H. R. Chase, Miami, Florida; D. E. Barrett, Assistant Director Fire Training, Ontario; Edgar A. Spotz, Public Service Institute, Pennsylvania; Chief J. I. Fetters, State Department of Education, Nebraska; Howard E. Swain, Supervisor, Trade & Industrial Education, New Hampshire. (3rd row, l. to r.): Battalion Chief A. M. Grunwell, Washington, D. C.; Robert C. Byrus, Iowa State College; Chief Lloyd Layman, Parkersburg, West Virginia; Chief John Redmond, President, International Association of Fire Fighters; Robert M. Lukens, IAFF, Middletown, Ohio; Battalion Chief Emmett H. Byrne, Cleveland, Ohio; Colonel H. R. Brayton, Director, Texas Firemen's Training School; Thomas S. Ward, Supervisor of Fire Training, California Department of Education.

Each noon Memphis fire fighters served lunch to the FDIC members. This was followed by a luncheon speaker.

# Farm and Rural Fire Fighting

**From an address by Norton Ames, given at the NFPA Regional Meeting at St. Paul, Minnesota, on November 18, 1950 Mr. Ames is a member of the NFPA Committee on Farm Fire Protection and a member of the Volunteer Fire Department of Oregon, Wisconsin (Member NFPA)**

**Part II**

IT is regrettable that expensive, good fire trucks are being delivered with the pump discharge gates over the suction intake. Too often firemen are trying to connect both suction and discharge at the same time, on the same spot, stepping on each others feet, getting elbows in each other's eyes, and generally hindering the work of the engineer.

How Oregon came to avoid this, I do not know. Some spirit must have whispered in our ear to have the discharge outlets at the rear of the truck. From that it was easy to attach a three-way water thief with two 1½-inch and one 2½-inch gated outlets. To each of these outlets we attached 100 or 150 feet of hose, stacked in separate compartments of the hose box to prevent snarling on withdrawal. To each such line we attach a fog nozzle. Firemen, riding on the rear step, need only open their proper valve, lay their hand on a nozzle, and start toward the fire.

Again we ran some time tests. Our older Pirsch pumper has a conventional arrangement; midship pump and a skid load of 1½ inch on top of 2½-inch hose. With five men it required 150 seconds from the time that we stopped at the fire, pulled off the skid load, secured the extra 1½-inch section from the storage box and the additional nozzle from the running board, dropped the line to the hydrant a half block away, broke and coupled to pump discharge, connected soft suction between pump and hydrant, and had water on the fire from the pair of 1½-inch lines at 100 pounds pressure. This was against 72 seconds and four men with the newer tanker and preconnected lines laying straight from the hydrant, and only 37 seconds and three men using the water from the tank.

*Gas Masks*

It does not seem that there should be need for much to be said on this. Some chiefs have gone so far as to make them a part of the fireman's coat. Certainly the self-contained masks should be close at hand at the fire. This is another advantage of tank trucks, for the firemen will not have to scamper to the pumper at the hydrant a block away for masks before entry can be made. (See Part I of this article in January 1951 FIREMEN.)

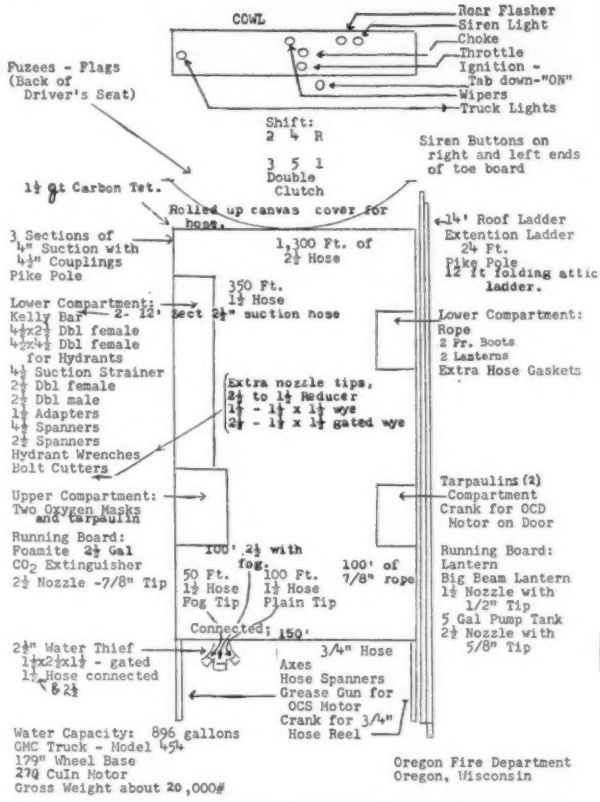
I do not think it necessary either to point out the benefits of the self-contained air or oxygen mask over the older "all-purpose." Breathable oxygen is all important to the fireman and knowing its safe supply gives him confidence, reduces his discomfort, and thereby promotes his capacity for work as well as his efficiency.

*Fog Nozzles*

DO we need to spend much time on the effectiveness of fog over straight streams? My mentor in much of this, Hugh McNair, Union Carbide and Chemical Co., in his "Strategy of Attack" says:

"When the seat of a Class A fire can be reached with fog discharge — use fog. When it can not be reached with fog, but can be with a straight stream, use a solid stream."

The first choice, then, should be fog. The alternate, because of distance, must be a solid stream.




**Each fireman in Oregon, Wisconsin, is furnished 8½ x 11 in. mimeographed charts describing each truck owned by the department, storing location of equipment and appliances as illustrated above.**

Naturally, the volume of water fog must be commensurate with the heat of the fire. Unless the fog is effective in sufficiently cooling the burning material, there may be some more comfort to the firemen, but there is little progress. Cooling the outer heated area does not extinguish the fire any more than cooling the water in the tea kettle puts out the gas jet below. The cooling must reach down to the area where combustion is taking place.

Two ideas may be helpful: a second fog directed on the lead fog team may permit them a more comfortable, faster advance on the fire, and, a shut-off valve back of an adjustable fog nozzle saves seconds each time the fog is used, and saves water damage. Fog adjustments may be left at about the right angle, and water turned on and off by the additional valve. Extra shut-offs are usually not necessary on fog nozzles which have a fixed, and not an adjustable, cone of discharge.

*Penetrants*

AS a companion tool to fog, for the past 18 months, we have used penetrants, or "wetter water." We had heard about its use on hay fires. We made our own experiments before adopting it. After it was regularly in our tanker, our first fire

was a nasty one in an oil tank truck on a country road. An officer called for foam, but before we could get our liquid foam nozzle connected and the foam pail opened, an aggressive young fireman had the fire knocked down with a preconnected line from the wet water in the tanker.

As most of you know, the additive reduces the surface tension of the applied water, so that the water does not stand in drops, but spreads, and penetrates. The burning material is cooled from all available directions.

Penetrants are desirable because, fundamentally, the water must either blanket that portion of the burning material which is so hot that it is giving off combustible gases; or the water must cool the material below its ignition point.

The water that leaves the scene of the fire and runs out the door is no longer exercising its cooling ability, and it is being wasted.

I claim experience with only one penetrant, "Unox," manufactured by Carbide and Carbon Chemicals Corporation, but using that we have no evidence of damaging corrosion to our tanks, hose, or fittings. In fact, it seems to make some of our gates work easier. We expected trouble with pump packings, but none has been apparent so far. It is not toxic to farm animals.

While it increases steam clouds, treated water reduces smoke and radiated heat. It enables water to do a quicker, better job by penetrating the char into the area where the fire-supporting gases are being generated, and all with less water damage and wasteful run off.

This group of five tools — tank trucks, preconnected lines, self-contained masks, fog, and penetrants — is not new. They were described in Mr. McNair's "Strategy of Attack" but the combination is worthy of repetition because of its value to rural fire departments. Outside of the tank trucks, they are better, more effective, inexpensive additions to their present equipment. If used in the combination, each contributes to the value of the other, and any one used singly will bring benefits.

*Farm Inspections*

So much for men and machines, but there are two further fields of service that many think the volunteer fire departments should enter. The first is farm fire inspections and the second is accident rescue.

I will admit that as yet I do not fully concur that volunteer firemen should be expected to take their evening and Sunday time to inspect farm properties. It seems to me that it is asking too much of gratuitous service, even though it is badly needed. It is quite an order. But, unless this volunteer inspection is well done, I am fearful of backfires from untrained judgment. Inspection work in the cities is done by specially trained, career firemen; and I doubt if the hazards of the cities are materially more difficult than those on the larger farms

Knowing the reaction which, over the years, there has been to milk and other inspectors, and doubting our legal rights to enter and inspect private farm properties or to enforce recommendations, I hesitate to ask Chief Culb and our Oregon firemen to embark on such an inspection service. I would expect troubles from both the farmers and the firemen.

There must be a better method. Maybe it is the Iowa system of inspection through insurance companies.

*Accident Rescue*

Accident rescue is something else. It is group action along the groove of sudden, service need. Oregon has no rescue truck, but it seems desirable that we should. We have lakes around us; we have railroad surface crossings; we have heavily traveled federal and state truck highways; but I am thinking more of farm hazards, corn huskers, gentle bulls, and tractors.

Last fall, on the farm where I was born, my cousin was digging a pit for a septic tank. Alone, he tried to couple tractor and scraper. The tractor tipped, and he was under it in the hole. It was an hour before chance visitors, neighbors, and his family got him out — a seriously injured man.

No, they did not call the fire department; they ran around the neighborhood for steel cables and heavy tractors. I think that we could have done a better job, even though we are not yet properly equipped, and our first aid training may be a little rusty.

**The third part of this article will appear in the March 1951 issue of FIREMEN.**

## Grange Provides Fire Station at Robertsville, Connecticut

VICTORY Grange No. 189 at Robertsville, Connecticut, last spring decided on a fire protection project as their annual entry in the National Grange Community service contest. The abandoned Forge School adjacent to the Grange Hall was purchased and some 150 members spent their spare time remodelling the station into an attractive modern fire station capable of housing two trucks.

The Forge Fire Company with 17 members was organized as the No. 2 Company in the town of Colebrook and the town purchased a truck for the No. 1 Company and assigned the old truck to the Forge Company.

The new station has a meeting room, kitchen, showers, lavatory, bedroom, and furnace room. The apparatus room has a large overhead door for removal of the trucks. In appropriate ceremonies attended by the state and local grange and fire service officials the deed to the property was presented by the Grange to Foreman George L. Coleman of the Forge Volunteer Fire Company.

# Records for the Small Department

**From a Paper by Dr. Hugo Wall, presented by Keith Royer, Traveling Fire Department Instructor, University of Kansas**

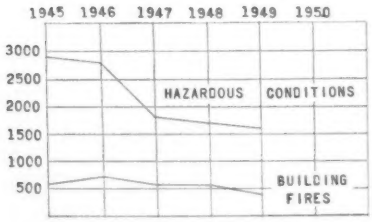
FIRE Department records, like other records, are kept to be used. Records which are merely filed away might as well not be kept.

All firemen recognize the value of the records on fires which the fire underwriters insist be kept because they are used by fire insurance companies, and they help determine the fire loss experience.

But the records have two other equally important functions. They are needed by the chief to help him administer his department, and they are essential for educational purposes when working with citizen groups interested in fire prevention and fire fighting. Nothing is more effective than charts and tables based on actual records in dealing with a critical city council.

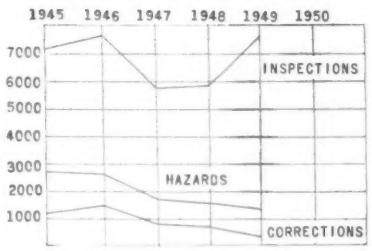
I have been greatly impressed by the care which firemen take to do a job as it ought to be done, and this applies to record keeping as well as fire-fighting. This means that all good departments are already keeping the necessary records. But they must be dug out and put into presentable form before they can be used effectively. The charts below (borrowed from Chief Wood of the Wichita department) illustrate a few of the many ways in which fire department records can be made to tell their story.

**Hazardous Conditions and Fires**




We accept Fire Prevention Bureaus as something an up-and-coming department ought to have. But what evidence do we have that they are really worth while? How can we determine this? One answer would be to compare the number of fire hazards reported by the bureau with the number of building fires. The correlation could not be expected to be close because of the many additional factors involved. But if such a correlation is found to exist then the work of the Fire Prevention Bureau is worth being given some careful attention.

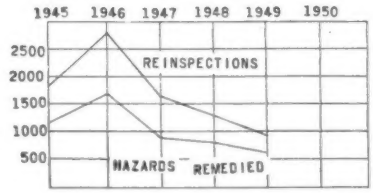
**Inspection and Hazards Found**




Did the decrease in hazards found represent less frequent inspections, or were fire hazards actually decreasing in number?

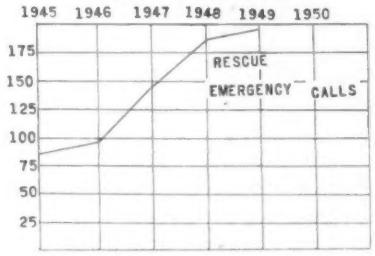
The chart shows that the number of hazards continued to decrease even when the number of inspections was increased. But the chart also shows that the number of hazards that were corrected had begun to fall. Why?

**Reinspections and Hazards Remedied**



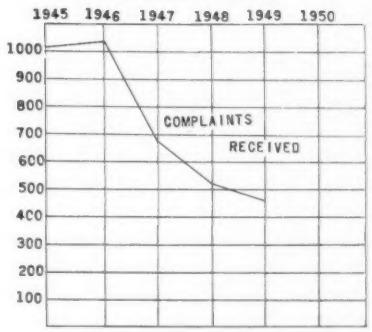

Here we may find the answer to why hazardous conditions are not being corrected. The number of hazardous conditions remedied varies directly with the number of reinspections. This presents a persuasive reason for increasing the Bureau's man-power.

**Rescue Emergency Calls**




The Wichita Fire Department has established a separate rescue emergency squad to respond to calls for help rather than having all fire companies do this, and has urged people to call in for help when a large amount of gasoline is spilled or some other fire hazard arises. This chart indicates that this program is meeting with success.

**Complaints Received**




Complaints regarding fire hazards are one measure of the public's attitude toward fire protection. This chart indicates fewer complaints presumably because of fewer hazards.

**Fires Cost Money**
**Average Cost Per Fire**

| Cause | 1945 | 1946 | 1947 | 1948 | 1949 |
|---|---|---|---|---|---|
| Careless Smoking | $133 | $156 | $224 | $72 | $120 |
| Electric Appliances | 81 | 223 | 365 | 90 | 214 |
| Grease on Stoves | 148 | 37 | 59 | 340 | 495 |
| Trash Burners | 40 | 71 | 122 | 372 | 52 |
| Unknown | 680 | 1125 | 350 | 1890 | 1948 |

Is a cigarette smoked in bed worth $120? Yet that was the average cost of fires caused by careless smoking. Is it worth $495 not to take a can of grease off the stove? Yet that was the average cost of fires caused by grease on stoves in 1949. These are our own local experiences — not some far-away national statistics.

**Relation of Distance of Fire Run to Fire Loss**

| | 1948 | 1949 | 1950 |
|---|---|---|---|
| TOTAL LOSS | $9825 (38 fires) | $5645 (46 fires) | |
| Average Loss | $218 | $141 | |
| Median Loss | $30 | $35-40 | |

**Median Loss by Distance**

| | | |
|---|---|---|
| Up to ½ mile | $15.00 | $27.50 |
| ½ to 1½ miles | 55.00 | 40.00 |
| Over 1½ miles | 425.00 | 50.00 |

Losses were smaller near fire stations. This illustrates how charts may be used to drive home a point when words alone are inadequate.

Conclusion — Firefighters have a story to tell. They have the data to back it up. Why don't they let that data tell their story for them? Why bury their records in department files?

## Wasted Water?

THE picture above was taken during a recent large-loss fire. It may be that the camera caught this hose stream as it was being moved from one effective position to another. Or, perhaps the fire fighters manning the line had a definite objective in mind when they concentrated this stream on a closed window.

In any event, here we see a good illustration of the limitations of an ordinary hose stream directed to a fourth floor window from the street level. Such a stream can, at best, penetrate only a few feet even if the windows are open or have been broken. On the other hand a ladder pipe or even a turret nozzle mounted on top of a piece of fire apparatus could deliver an effective heavy stream to the fourth floor.

### Fire Schools in 1951

**New Mexico:** The 1951 Fire School and Convention will be held in Hobbs on May 14, 15, and 16.

**Pennsylvania:** The 13th Annual Pennsylvania Fire School will be held at Lewistown on August 6 to 10, 1951.

**South Dakota:** The Pierre Fire Department will be host to the South Dakota 22nd Annual Fire School, June 18 through June 22, 1951.


**FOR SALE**

1946 Barton Fire Pump

Front end — Gear Ratio 2.36-1-Type U-40, 400 gal. per min. Made by American Marsh Pump Co. Price $350. In very good condition, this pump must be inspected to be appreciated.

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Several years ago, Midwestern developed the *original* striped safety coat. The highly visible stripes are moulded to and vulcanized as part of the material. Thousands of Midwestern Safety Coats are serving fire departments throughout the world. Service records prove these garments not only offer high safety visibility, but have the qualities required to withstand the rough usage required in your hazardous work of protecting life and property against fire.

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A replica of the famous "New Yorker" as to style, but made of the new CAIRNS "Flintflex" plastic; has a new type of suspension, with a formable headband that fits any head shape.

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Roaster-fresh coffee...on **INSTANT** call!

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*Nescafé (pronounced NES-CAFAY) is the exclusive registered trade-mark of The Nestlé Company, Inc. to designate its soluble coffee product which is composed of equal parts of pure soluble coffee and added pure carbohydrates (dextrins, maltose and dextrose) added solely to protect the flavor.


### Making a Good Job Of It

(*Continued from page 10*)

lightly manned and more widely spaced and when a working fire does occur each member may have a harder task. Grass, brush and field fires spread very rapidly, are exhausting to fight and may lead to heart failure. Also the experienced men are needed in high value districts and properly seasoned young men are also needed in residential areas. Men who are physically unfit for duty should be granted adequate pensions.

THERE is always the question as to where to start the new men after they leave the training school. This is a matter that deserves more serious consideration by the personnel officers than it often receives. If the new men are immediately sent out to relatively inactive stations to spend their first several years of duty their entire careers may be ruined by the cynicism and disillusionment unfortunately found among some members of fire companies that have been allowed to stagnate. New men should be placed under fire officers having enthusiasm tempered with vision. Several outstanding departments use their training divisions as active fire fighting units in which new men are indoctrinated and seasoned and in which company officers also receive instruction in company management and training techniques.

Each department should estimate the average length of service to be expected from each member prior to a pension and should plan the proper utilization of each man's abilities over this period. During the first few years each member should be given a maximum of experience in the various phases of the service. This service should at least include both engine and truck company duty. By the end of this time it should be apparent to the deputy chiefs or other personnel officers whether the individual will be of most value in an engine company as a hoseman or pump operator, or in a truck, rescue or special duty unit. Potential officers, as indicated by men who do especially well in examinations, should be given opportunities for extra experience. The bookish type of officer who seeks to stay overlong in the suburbs so that he can study without interruption should receive special but fair attention. In all too many fire departments the chief is under pressure from the friends of one or more members who do not wish to be transferred even though they may have had a fair share of consideration. One chief had a letter

from a politician interceding for a young fireman who had been moved from a "soft" suburban berth to a busy company. The chief's answer was: "Your client is a very promising young fire fighter and we believe he is potential officer material. It would be unfair to his career to deny him an opportunity to gain experience with some of our busier companies." Apparently this answer was satisfactory. Chiefs may also be under pressure from members who for some reason want a certain transfer even though other members are actually entitled to the consideration because of experience and service.

While it may be fair in the first five years of service to move a man several times to give him a broad base of experience, thereafter, it may be generally desirable to leave men for as much as three to five years in a given station before considering another move. Members should have the knowledge that they are not fixtures but can expect to be moved after a fair number of years at one post. When transfers must be made, men eligible for transfers should be encouraged to state their preference and personnel officers should consult with them in this connection. It may be well to periodically give each member a chance to indicate whether he would like a transfer or prefers his present station and if a transfer is desired, first, second, and third choices might be indicated.

Punitive transfers are not advisable because they accomplish little if any beneficial results but rather cause resentments which interfere with the efficiency of the department. They are an evidence of bad personnel practices and poor morale. If a man is to be punished it should be a normal punishment after fair trial in which written charges have been substantiated. The U.S. Constitution specifically forbids any cruel or unusual forms of punishment. Ostracism of a man or "railroading" to some remote, out-of-sight post might almost fall in this category. Secondly, it is not fair to any fire fighting company to send a man to live and work with them who has an official taint. There is the implication, "We are sending you a second rate man as punishment," and the reaction is "Headquarters considers our company and its members of second rate importance. Why that fellow couldn't get along on the other side of town! Don't they know that we have been one of the best outfits in the department?" The members feel like a "baseball farm club" to which is sent players who have failed in big league. They lose confidence in their own outfit. It is also unfair to the officer because of the implication that headquarters expects him to be a martinet useful in handing out unusual discipline of the old "spit and polish" type. Such discipline could be deadly even if nothing ever went into the personnel record or company journal. Perhaps the brass was polished for eight or ten hours a day before the captain was satisfied.

With increasing recognition of the importance of battalion or district organizations in fire department operations, more attention may be given to the advantages of more frequent transfers of members within a battalion and less frequent transfers from one battalion or division to another. Such transfers within a battalion are possible where adequate personnel records are kept by battalion chiefs. Men and officers can be assigned to battalions and company assignments can then be made as need presents without an excess of administrative detail at headquarters. This should encourage battalion chiefs to take a greater interest in the efficiency and make-up of their various companies. Most battalions have engine, truck, and special duty units and usually some companies are in relatively high value districts and others are chiefly in residential areas. Transfer of men within a battalion should encourage teamwork between units and discourage abnormal company pride. Another good practice is to rotate officers within a battalion so that they may be familiar with the other nearby inspection districts in which they may be called upon to operate.


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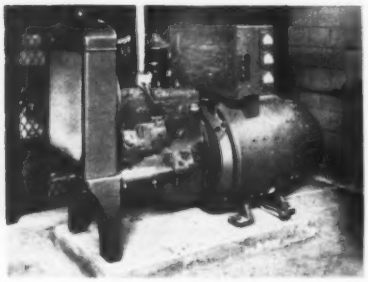
## New Fire Station at Middleton, Nova Scotia

The Fire Department of Middleton, Nova Scotia, has just moved into the attractive fire station shown above and completed at a cost of $30,000. The structure was designed by Architect D. A. Webber of Halifax and built by Armstrong and Dodge Company of Middleton. The 45 x 66 foot apparatus room can house six vehicles. In addition, there is a 13 x 16 foot chief's office, a 30 x 33 foot training room, a 13 x 20 foot card room, a 14 x 15 foot kitchen with propane gas range, two lavatories, heater rooms with oil burning forced hot air heater. The three apparatus doors are each an ample 12 feet wide. The 52 members of the department are all volunteers and all are enrolled to receive NFPA FIREMEN magazine. Apparatus consists of a Bickle-Seagrave pumper on a Chevrolet chassis, a Bickle-Seagrave trailer pump, a Dodge truck carrying hose for the trailer pump, and a ladder truck built by the firemen on a Studebaker chassis. Middleton has a population of 2,000 persons.

## Lansing Provides Standby Power for Fire Station

IN the December, 1950, issue of FIREMEN we showed a fire in the Trappe Fire Company Station in Pennsylvania where apparatus was trapped and damaged because of failure of the electric motor operating apparatus doors due to the fire. Shown above is the central fire station at Lansing, Michigan, which for ten years has had a Kohler plant in readiness to furnish electricity for opening apparatus doors in event of normal power failure. The unit shown here delivers 10 KWs and is equipped with a 32 volt starting battery. It is a 115/250 volt AC plant. Recently a second unit has been installed to operate signal system controls and a short wave radio transmitter in event of failure of normal power sources.

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**National Fire Protection Association**
**60 Batterymarch Street, Boston 10, Mass.**



**NFPA Inspection Manual**
**336 pp. $3.00 per copy**
**National Fire Protection Association**
**60 Batterymarch Street, Boston 10, Mass.**

## Atlantic, Iowa, Again Wins in Fire Prevention Week Contest

ATLANTIC, IOWA, which in 1949 placed second in the United States in Fire Prevention Week Contest sponsored by the NFPA Committee on Fire Prevention and Clean-up Campaign, was awarded first place in the 27th annual contest in 1950.

Second place was achieved by the Fort Collins, Colorado, Fire Department headed by Chief T. P. Treadwell, a member of the NFPA Committees on Firemen's Training and Fire Department Equipment.

The 1950 contest was held under the direction of T. Alfred Fleming, former Director of Conservation, of the National Board of Fire Underwriters.

## Civil Defense Against Special Weapons

WEAPONS producing fire effects are only one of the possibilities of modern warfare. Last month the Federal Civil Defense Administration issued a volume, "Civil Defense Health Services and Special Weapons Defense," a 250-page document which may be obtained for 60¢ from the U. S. Government Printing Office, Washington 25, D. C.

One chapter deals with health problems in water supplies, pointing out that contaminated water from lakes, rivers, canals, sewers and similar available sources may be pumped into the distribution system to meet fire fighting demands. The health, water and fire authorities must meet this problem.

The document notes that there will be considerable demand for tank trucks to be used for the transport of water. From this fire departments should note that they will be competing for existing tank trucks with the very pressing demands of the population for the transport of suitable drinking water supplies in a good many wartime disaster situations.

The book describes various biological warfare agents, among them the use of aerosols or fine mists. The common "insect bombs" produce small scale aerosols. The possibility is described that such aerosols, which would contaminate, could be released in closed ventilating systems in large auditoriums. This is simply an additional threat to the public safety from ventilating and air conditioning systems in buildings, presenting a problem not unlike the problem whereby such systems can spread smoke and flame as well as air.

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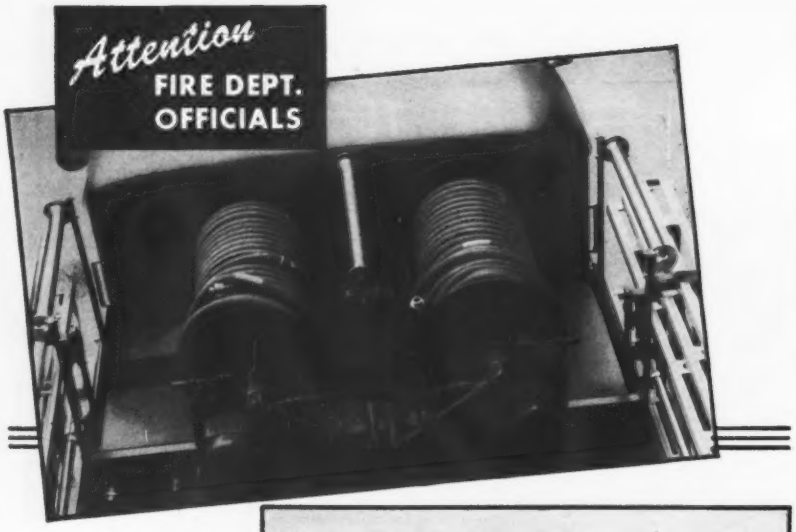

Seagrave Fire Truck equipped with the New Hannay Hose Reels.

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New models for fire trucks and airport crash trucks are especially designed with extra strong construction to withstand high pressures and the motor is protected against fog, foam, water and fumes. Developed to overcome the danger factors previously associated with electrical rewinds, the Hannay Reel has been PROVEN SAFE and efficient in exacting factory and field service tests. Explosion-proof, heavy duty motor with permanently lubricated bearings is Underwriters Approved Class 1, Group D, and is an integral part of the reel; needs no attention.

- ✱ Can be connected through conduit, for sealed, safe installation.
- ✱ Sealed push button control; "push" to start; "release" to stop.
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## Arson Investigators' Seminar at Purdue University

THE seventh annual seminar and training course for arson investigators will be conducted at Purdue University, Lafayette, Indiana, April 23–27, 1951. Specialized study and discussion of arson investigation problems will be conducted under the guidance of police and fire specialists from the United States and Canada.

This program is the only one devoted exclusively to the study of arson detection and investigation. It offers an opportunity for full discussion and study of arson problems, actual case histories, and new developments in the field.

Further information may be obtained from the Public Safety Institute, Purdue University, Lafayette, Indiana.

## Spray-Stream Foam Nozzle

A NEW spray-stream foam nozzle has been developed by the National Foam System, Inc., West Chester, Pennsylvania. Adjustment to either stream is accomplished by the movement of a small bolt-action lever.

Two standard sizes of the nozzle are available, one weighing 12 pounds and the other 26 pounds. Spray pattern sizes range from a diameter of 6 feet with a range of 13 feet to a diameter of 14 feet at a range of 35 feet.

## The Beaumont, Texas Fire Department

THE fire department of Beaumont, Texas, consists of 84 members headed by Chief S. D. O'Connor who has been chief since 1918. According to a recent report of the National Board of Fire Underwriters, there are 75 fire fighters including 5 chief officers and 2 fire prevention officers including Fire Marshal C. C. Hancock. Assistant Chief Ruie E. Akin is Drillmaster and training is carried out at a 72-ft. brick, concrete and steel tower. Firemen work 84 hours a week.

Beaumont has a population of 94,000. The city covers 31.65 sq. miles along the Neches River, and 40 per cent of the territory is built up. There are 7 fire stations housing 7 engine, 1 hose, 3 ladder, and 1 floodlight companies. Eight of the companies have 3 men on duty and others have 2 or less.

There is a Gamewell fire alarm system with 132 boxes with alarm equipment housed on the second floor of the headquarters fire station. The department's FM radio operates on the same frequency as Port Arthur, Orange, and Galveston in Texas, and Lake Charles, La.

The National Board's suggestions for strengthening the fire protection of Beaumont include recommendations for at least 5 men minimum strength for all fire companies in high value districts and 4 men in other companies; 3 new fire stations to protect the western section of the city portions of which are more than 3 miles from existing companies; addition of another ladder company and relocation of an existing ladder company; and provision of a pumper for the hose company. Other suggestions are the appointment of more company officers, a more complete training program, additional fire alarm boxes and additional fire alarm headquarters equipment.

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**Triple Combination Pumper**

1940 Dodge chassis. American Marsh, 500 gpm. Standard equipment. 500 gallon booster tank.

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ALSO
BEAVERS IN 20 AND 30 OZ. WEIGHTS

USED BY FIRE DEPARTMENTS
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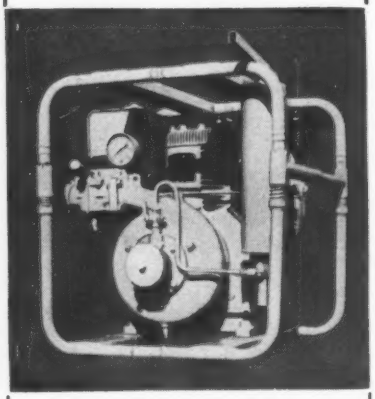
# HAS YOUR FIRE TRUCK A HALE TYPE FZZ?

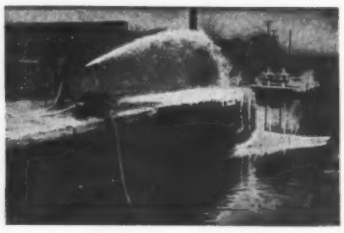
*" . . . All Fire Trucks should have one or more"*

says Fire Chief from Missouri



Above — This frame-mounted FZZ (with carrying handles turned in) can be easily carried to source of water which truck cannot reach, for refilling booster tank or for fighting fire direct. Unit is also available mounted on two truck-type wheels or on rubber-cushioned steel channels. **Note:** Discharge adapter can be supplied for use with 2½-in. hose.

Chief R. M. Wilson of Monroe City, Missouri suggests that all Fire Trucks should have a Hale type FZZ portable pumping unit . . . He writes: "I want to tell you how pleased I am with this FZZ pump. We received it May 27th. On May 29th I was compelled to use it during a bad rain storm as our large pumper was unable to reach water supply. We put the little pump at a pond, used 500 ft. 1½" hose layout, and saved this farmer almost $2,000.00. **The FZZ gave a nice fire stream. The motor started on the first pull in a downpour of rain. Not one time did it stop. We used it for almost 2 hrs. Had we not had this portable pump, there was no way we could put out this fire. I think all fire trucks for Town or Country should have one or more."**



Above — FZZ Pumping Foam. (Foam proportioner built in if specified)

With a ready-for-use Hale FZZ you can fight fires not only with solid stream and/or fog, but also with foam — a valuable weapon against gasoline truck fires.

The easily portable FZZ can be mounted in any apparatus, making it possible to fight fires while apparatus is in motion, using booster tank for source of water. CAPACITY 60 G.P.M. at 90 lbs. pressure; 150 G.P.M. at 30 lbs. pressure; ample reserve capacity. *Ask for demonstration; no obligation.*

*Write today for FZZ FOLDER to:*

**HALE FIRE PUMP COMPANY**

CONSHOHOCKEN, PA.

*Fire Pumps in All Standard Capacities*


# New Edition of Fire Administration Book

JUST off the press is the new edition of "Municipal Fire Administration," a 498-page volume which discusses the best practices in fire department organization and administration. This is the fifth edition, the first having been published in 1936, and it represents a complete revision of the previous 1946 book. Published by the International City Managers' Association, it was edited by Horatio Bond, chief engineer of the National Fire Protection Association, assisted by other staff members of NFPA, including Warren Y. Kimball, James K. McElroy, and Charles S. Morgan. Chief John H. Alderson of Los Angeles and other officers of the Los Angeles city and county fire departments made useful suggestions in the preparation of this book.

This practical manual meets the need for information on the best methods of appraising and improving the fire protection services of a city. Management problems are approached from the point of view of the fire chief and his principal command officers and of the chief administrator.

The book contains 13 chapters, in addition has 57 forms and charts and 18 tables. Reproduced in full in the appendix of the book is the standard schedule for grading of cities and towns of the National Board of Fire Underwriters, a list of fire insurance inspection boards and bureaus, typical ordinances regulating the furnishing of fire protection outside the city, a list of technical standards in the fire field, a model state fire marshal law, and a bibliography on fire administration.

"MUNICIPAL Fire Administration" is used as the text of an in-service correspondence training course for fire department command officers and chief administrators of cities. This training is offered through the Institute for Training in Municipal Administration, conducted by the International City Managers' Association. During the past 16 years fire department officers in many cities have enrolled in this course. Enrollees in 1950 included officers in such cities as Portland, Maine; Pueblo, Colorado; Escanaba and Jackson, Michigan; Alhambra and Santa Monica, California; East Orange, New Jersey; Somerville, Massachusetts; Green Bay, Wisconsin; Chattanooga, Tennessee; and Arlington, Virginia.

This book also is widely used in group training by the conference discussion method. Among the larger cities that have recently used this method are Dayton, Ohio; Oakland, California; and Pontiac, Michigan. In Pontiac, for example, fire department officers enrolled in the course met once a week for a two-hour session, half on their own time and half on the city's time. Certificates were awarded upon completion of the course.

"Municipal Fire Administration" is used as the text in fire administration courses offered at several universities. For example, the School of Public Administration at the University of Southern California this semester is using nearly 200 copies of the book in its course on fire administration for firemen in the Los Angeles area.

The price of the new fifth edition remains the same as in past years, $7.50 per copy postpaid, and orders should be sent to the International City Managers' Association, 1313 East 60th Street, Chicago 37.

★ ★ ★

# New U. S. Federal Civil Defense Administration

A FEDERAL CIVIL DEFENSE ADMINISTRATION for the United States has been set up by executive order, with Millard Caldwell, former governor of Florida, as administrator. This new administration includes the staff formerly working for the National Security Resources Board on civil defense.

Recently, fire problems of civil defense were given preliminary exploration at a meeting arranged by Kyle P. Laughlin, fire protection engineer on the staff of the Federal Civil Defense Administration. This conference included John Neale, chief engineer, National Board of Fire Underwriters; Fred Shepperd, editor of *Fire Engineering* magazine; Forrest J. Sanborn, Office, Chief of Engineers, U. S. Army; George J. Richardson, secretary-treasurer, International Association of Fire Fighters, and NFPA chief engineer Horatio Bond. John W. Alderson, chief of the Los Angeles Fire Department and president of the International Association of Fire Chiefs was also invited to this session but could not be present. Matters discussed included the training of householders in first aid fire fighting, fire department equipment and manpower requirements.

## Four Fire Fighters Die in Big Chicago Explosion and Fire

THREE Chicago city fire fighters and a member of the Chicago Fire Patrol (salvage corps) were killed by a falling wall caused by a smoke explosion early in a 5-alarm fire which destroyed a very old unsprinklered 4-story brick, semi-mill multiple tenant factory and warehouse building on the Chicago River on the afternoon of January 12th. Numerous firemen and Fire Patrol men inside the building, and truckmen seeking to ventilate the roof, escaped with their lives. An adjoining 10-story fire resistive building protected by wired glass windows in metal frames and fire department hose streams escaped with smoke and water damage and no sprinklers opened.

Fireboat *Joseph Medill* approaches with two turret streams early in the blaze but shortly after the fatal explosion blew out the front wall.

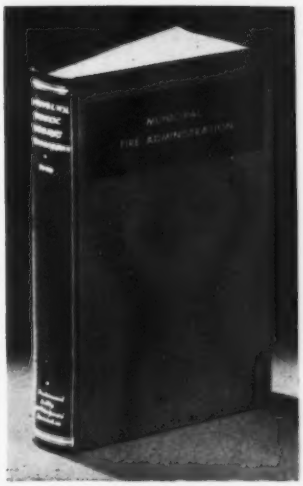
View from Chicago's Merchandise Mart at height of fire after explosion had toppled walls killing four firemen.


**Just Off the Press—*New Fire Manual***

# MUNICIPAL FIRE ADMINISTRATION

**A FEW SUBJECTS COVERED**

The Municipal Fire Problem
Organization for Fire Protection
Investigation and Incendiarism
Technique of Fire Fighting
Personnel Management
Water Supply for Fire Service
Fire Insurance Rates
Equipment and Personnel
Fire Alarm Signaling Systems
Fire Prevention, Legal Aspects
Municipal and State Agencies
Department Records and Results
Department Buildings and Equipment



**FIFTH EDITION NOW AVAILABLE**

First published in 1936, this new edition (two years in preparation) is completely rewritten, condensed to 498 pages, and includes the latest methods of tested fire procedures. This book is the basis for our in-service correspondence course in fire administration and is used for training purposes at the supervisory level in hundreds of fire departments in towns and cities of all sizes.

**PREPARED BY SPECIALISTS.** This manual was edited by Horatio Bond, Chief Engineer of the National Fire Protection Association, in collaboration with other specialists in NFPA, with advice and suggestions from Chief John H. Alderson of Los Angeles and other officers of the Los Angeles city and county fire departments, and many other consultants and advisers.

**ORDER COPY TODAY ON 10 DAYS APPROVAL — Price $7.50 postpaid**

**Institute For Training In Municipal Administration**

*Conducted Since 1934 by The International City Managers' Association*

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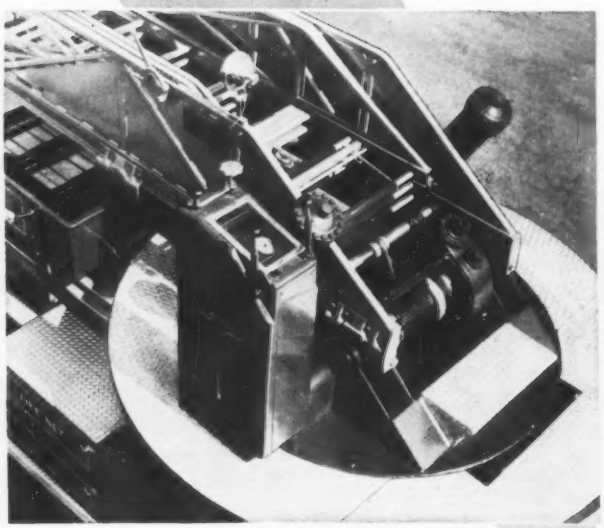
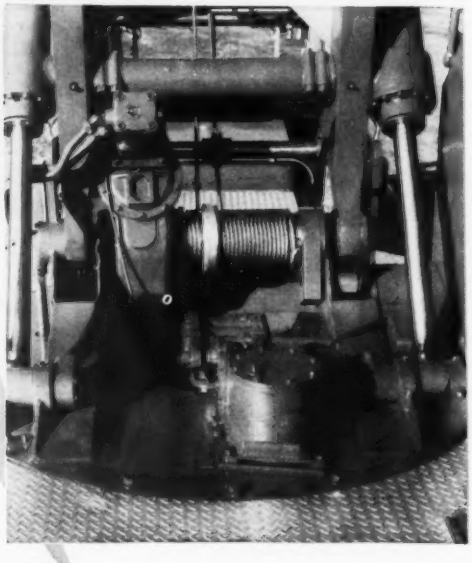
# THERE'S *Extra Value* IN

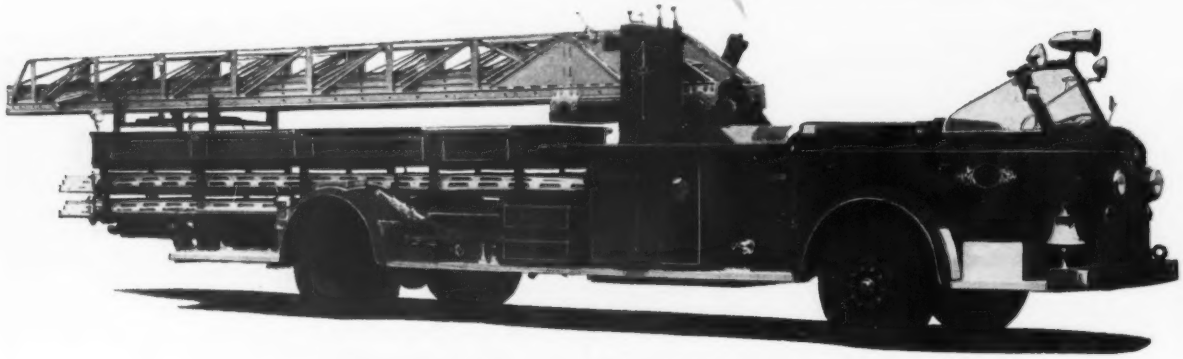
THE Extra Values in the American La-France 4-wheel aerial are provided for greater ease of operation, greater safety for the firemen, more stability in aerial ladder use, and easier inspection of all operating units. The cab - ahead - of - engine design gives more visibility and safety for the driver, easier steering and shorter turns. The all-steel aerial ladder for greater safety and load capacity.



- Larger platform (94 in. diameter) affords ample room with safety for all operations. Platform of heavy steel with non-skid safety tread surface.



- All hydraulic power units are accessible. All piping is metal tubing, no rubber hose.



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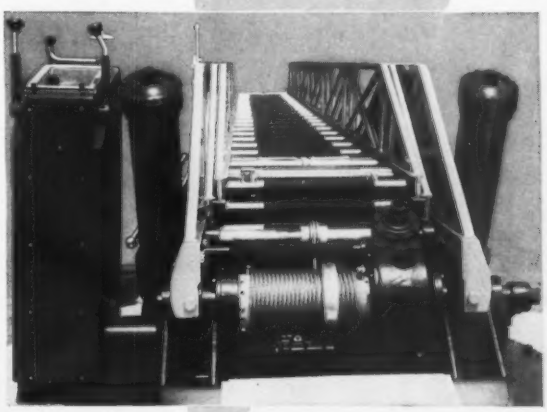
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

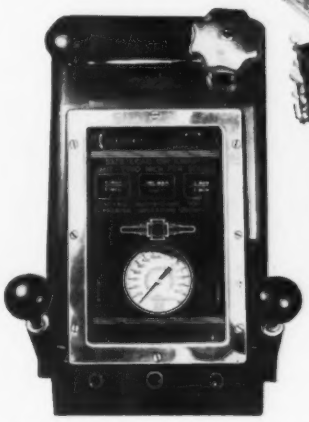
# AMERICAN - LAFRANCE AERIAL TRUCKS . . .

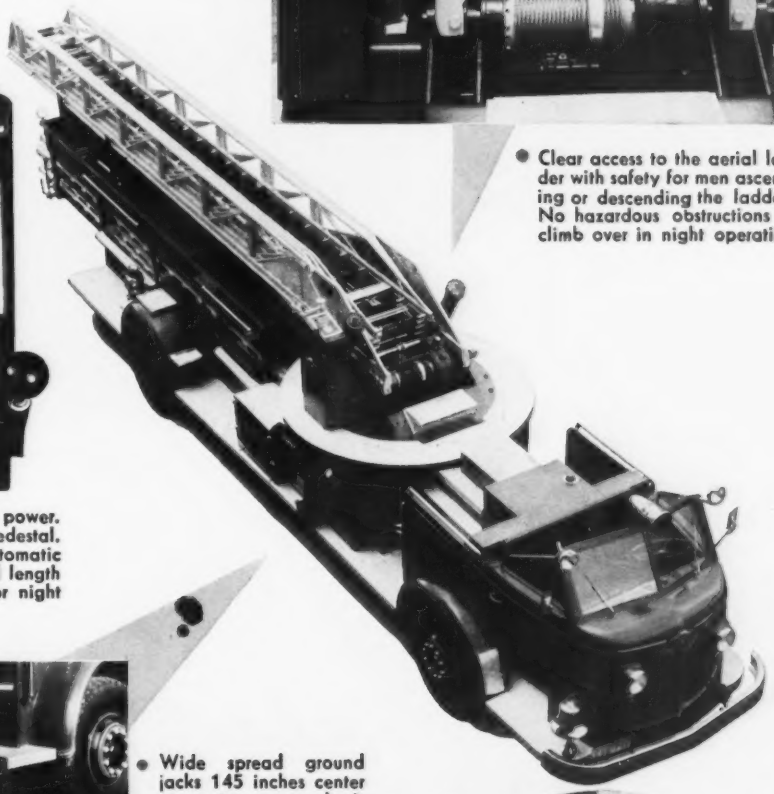
## Exclusive Aerial Features include

- 65 inch diameter turntable, double row ball-bearing, for more ladder stability.
- Turn-buckles for all cable adjustments. No cables to disconnect, no hand stretching of cables.
- Safety limit on hydraulic power for retracting fly sections—no rungs or cable damage if locks are not released before retracting.
- Safety limit of hydraulic power in lowering ladder. Excess power cannot be applied to lower ladder when extended and supported at outer end by a building or structure.

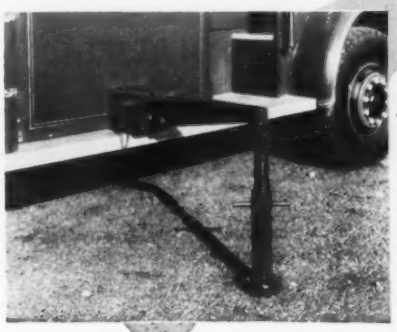


- Clear access to the aerial ladder with safety for men ascending or descending the ladder. No hazardous obstructions to climb over in night operation.





- All operations by hydraulic power. All controls in control pedestal. Visual load indication, automatic registration for all angles and length extended. Indirect lighting for night operations.



- Wide spread ground jacks 145 inches center to center across chasis for maximum safety and ladder loading. Quick acting mechanical type positive when set. Hinged to permit truck movement in emergencies without retracting.

- Sixth in a series of advertisements featuring Extra Values in American LaFrance fire apparatus.

FASTER..
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EFFECTIVE
FIRE
CONTROL
WITH THE
ANSUL
Stream
Pattern
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BETTER
HEAT-SHIELD
PROTECTION
Exclusive Features
• Water-tight construction.
• Provides a modified cone-shaped stream pattern without hole in the center of the stream.
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• Designed for use by inexperienced operators.
• Low velocity, more effective stream of dry chemical.
Why Advertise the Nozzle! . . . .
. . . . because the nozzle on your ANSUL Dry Chemical Fire Extinguisher is water-tight . . . it won't become inoperative due to corrosion or caking of dry chemical within the working parts . . . . the most inexperienced man in your plant can use the ANSUL extinguisher effectively . . . and only Ansul has a nozzle to meet all of these requirements!
If your hazards require special long range straight stream nozzles, you can get Ansul fire extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.
Send for File No. 643. You will receive our latest catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.
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IN ALL PRINCIPAL CITIES IN THE U.S.A., CANADA AND OTHER COUNTRIES
"PLUS-FIFTY"
DRY CHEMICAL
IS MORE DEPENDABLE
ALL-WAYS!
ANSUL
THIS TRADE MARK ASSURES YOU OF QUALITY PRODUCTS


### Don't Forget Contest for Rural Fire Departments

THE National Fire Waste Council is conducting a Farm Fire Department Contest intended to encourage the expansion and improvement of farm fire department service. Entries should be submitted by June 30.

To assure fair and competitive standards, departments entering the contest will be assigned to one of three groups. (*a*) Rural fire districts (townships, county, or special tax districts operating fire companies). (*b*) Town or city fire departments operating rural trucks (may be supported by township or county funds or by donations). (*c*) Voluntary associations or fire departments. (Voluntary fire service obtaining funds chiefly through donations, amusements, etc.)

Any department interested in the contest may obtain information through the local Chamber of Commerce or by writing to the National Fire Waste Council, c/o Chamber of Commerce of the United States, 1615 H Street, Washington, D. C.

### Smokey the Bear

At his home in the National Zoo, Smokey was made an honorary member of the Washington, D. C, Fire Department. He was presented a fire chief's hat (which he is trying to don at a rakish angle), a fire extinguisher, asbestos gloves, and a membership card. Smokey is the bear cub who was rescued from a forest fire in New Mexico and who serves as a highlight in the fire prevention campaigns of the U. S. Forest Service.

## NFPA Welcomes:

FORTY-ONE departments from twenty states and four provinces in Canada. Ohio, with seven departments joining, led all states and provinces in new NFPA Fire Department Members. At present there are 1,451 Companies and 20,986 men who are receiving NFPA publications through Fire Department Membership. The following departments enrolled during the month of December:

**Alabama:** Opp Fire Department, Opp.

**Arizona:** Southside Fire Protection Company, Chandler

**Connecticut:** North Haven Volunteer Fire Company No. 1, North Haven

**Florida:** Leesburg Fire Department, Leesburg

**Louisiana:** Chief H. L. Hales, Monroe. Plaquemine Fire Department, Plaquemine

**Idaho:** Ashton Fire Department, Ashton
Boise Fire Department, Boise
City of Idaho Falls Fire Department, Idaho Falls
Kellog Fire Department, Kellog
Lewiston Fire Department, Lewiston
Chief Wayne L. Johnson, Weiser

**Illinois:** Atkinson Fire Department, Atkinson

**Indiana:** Chief Alex Andrzejewski South Bend Pioneer Corn Company, Incorporated, Tipton

**Maine:** Rockland Fire Department, Rockland

**Michigan:** Emmett Township Fire Department, Battle Creek
Genesee Fire Department No. 1, Genesee
Mt. Pleasant Fire Department, Mt. Pleasant

**Missouri:** Kennett Fire Department, Kennett

**New Jersey:** Fire Company No. 1, Caldwell

**North Dakota:** Bottineau Volunteer Fire Department, Bottineau

**Ohio:** Miami Township Fire Department No. 1, Addyston
Belle Center Volunteer Fire Department, Belle Center
Covington Fire Department, Covington
Painesville Fire Department, Painesville
Sherrodsville Volunteer Fire Department, Sherrodsville
Westerville Fire Department, Westerville
Wilmington Fire Department, Wilmington

**Oklahoma:** Chief Jewel Payne, Edmond

**Oregon:** Klamath Falls Fire Department, Klamath Falls

**Pennsylvania:** West Mead No. 1, South Meadville Volunteer Fire Department, Meadville
Wm. Penn Volunteer Fire Association, Rosedale Fire Department, Verona

**South Dakota:** White Lake Fire Department, White Lake

**Texas:** Corpus Christi Refinery — Terminal Fire Department, Corpus Christi

**Wisconsin:** Kekoskee Fire Department, Maysville

**Canada**

**Alberta:** Chief W. H. Short, Lethbridge

**New Brunswick:** Edmunston Fire Department, Edmunston

**Quebec:** Chief Charles R. Demers, Rowdon

**Saskatchewan:** Lashburn Volunteer Fire Brigade, Lashburn
Chief Alfred Turner, Prince Albert


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— *it helps us to*

- Protect lives
- Reduce property losses
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RESULT: an outstanding safety record"

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# GEYSER DELUGE DECK PIPES

FOR HIGH VELOCITY HIGH GPM INSTALLATIONS

Mount on apparatus or install wherever permanent fire protection is needed. Ideal for lumber yards, stock yards, industrial plants, docks, etc.

Geyser Deluge Deck Pumps have a full horizontal sweep of 360°, and a vertical range of 10° below and 60° above horizontal. Bronze ball bearing movement — locks in any position. Direct threaded or bolt type flange bases available.

Tips are straight bored for maximum distance and stream efficiency — 1½", 1¾" or 2" discharge tips furnished as standard.

Contact your Wooster Brass Representative or write direct

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# "What's New in Fire Equipment?"

## Radio Apparatus Corporation Has New Mobile Radio

Radio Apparatus Corporation announces a new mobile FM receiver that brings in all two-way telephone communications. Called the Monitoradio, the unit is a complete receiver and comes in two models. M-51 is for the 30 to 50 megacycle band and will receive clear signals at a distance of 25 to 50 miles and model M-101 for 152 to 162 megacycles with whip antenna will receive within a ten-mile range. For further details write to Radio Apparatus Corporation, 310 Fountain Square Theatre Building, Indianapolis, Indiana.

## Ansul METL-X Extinguisher for Hazardous Metal Fires

Latest development by the Ansul Chemical Company is METL-X dry powder pressurized extinguisher for fighting fires in hazardous metals such as magnesium, sodium, potassium, zinc, and powdered aluminum. These extinguishers are manufactured in 30 lb., 150 lb., and 300 lb. sizes, with larger units available including an automatic piped system.

The dry powder extinguishing agent fuses and forms an air-excluding crust over burning metal. The small-particle size of dry powder makes possible its use in a gas-pressure type extinguisher.

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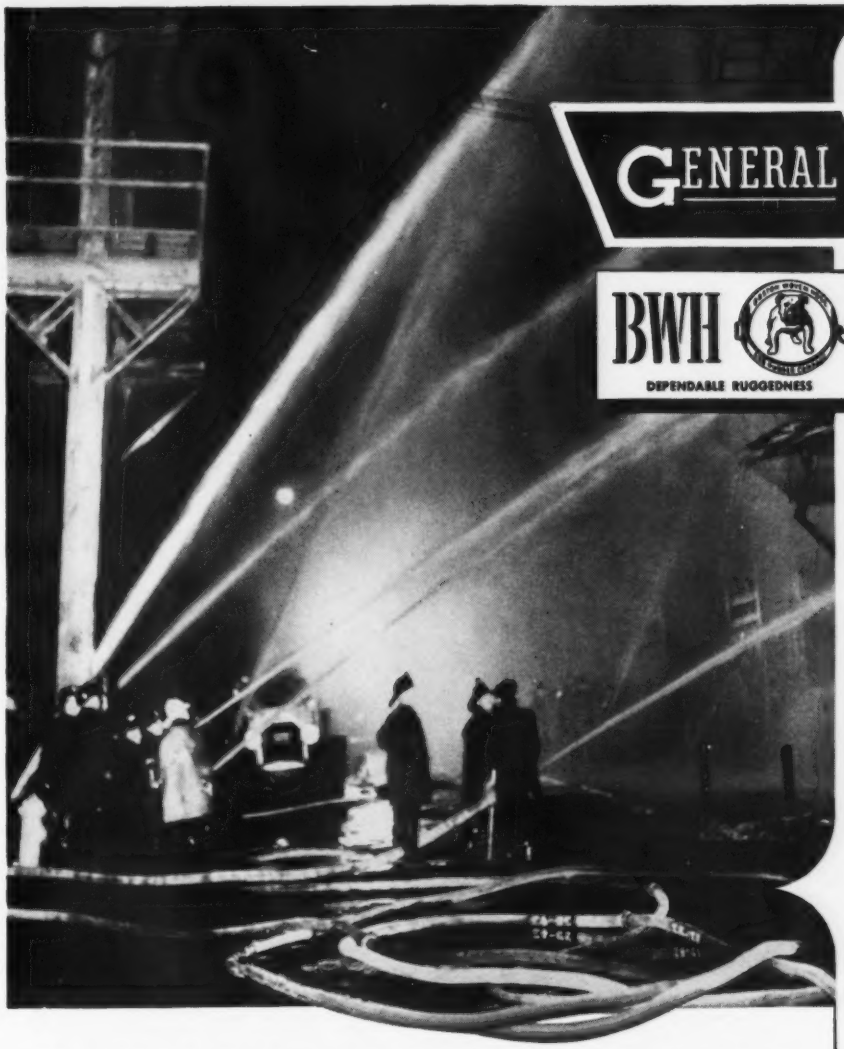
**HOWE FIRE APPARATUS COMPANY, 1406 West 22nd Street, Anderson, Indiana**




# The BEST Equipment is the ONLY Protection Against the WORST Blaze

You can't put an end to fires, but you can go a long way toward preventing a tragedy. You can do this by keeping an ample supply of fire-fighting equipment . . . and keeping it in tip-top shape. Records show that the worst blazes have been successfully beaten by the best equipment and skilled handling, while equipment-failure underlies most tragedies.

Hose-failure is one of the big equipment worries that you can be free of always when your department is equipped with BWH Fire Hose. It's light in weight and easy to handle on ground or ladder. Flat cured to fold fast and snug in truck bed. And we'll let its reputation speak for BWH year in, year out toughness and pressure resistance . . . a real bearcat for punishment!

Look for the "General" trademark in the classified section of your phone book. Use this organization's specialized experience to help you in your equipment problems . . . let our Fire Equipment experts tell you more about the BWH 73-year leadership in the fire hose field.

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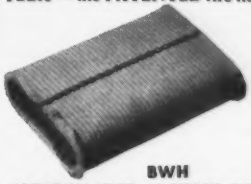
**Double Jacket Construction**

General INNER FLEX is the only fire hose with the genuine, smooth-folding inner jacket, especially designed to provide complete pliability. The specially woven folded edges prevent squeezing and pinching and its smooth rubber lining affords longer lasting life. INNER FLEX — the PATENTED fire hose.



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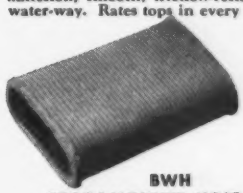
**"BOSTON FIRE JACKET" HOSE**
**Double Jacket**

Heavier, stronger fibers, perfect adhesion, smooth, friction-resistant water-way. Rates tops in every test!



**BWH**
**"PARAMOUNT" HOSE**
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Designed for easy handling and long service on tough jobs. Ages well, withstands high pressures.

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For long, trouble-free performance in communities where a light service hose is adequate.

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**Single or Double Jacket**

Made in strict accordance with the National Board of Fire Underwriters' specifications. Labeled or unlabeled.

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## The Cause of the Hyndman, Pennsylvania Fire?

(See Answer Below)

**INDIAN FIRE PUMPS** are as effective on roof, trash, building and room fires as they are on grass and forest fires. For Civilian Defense they are unequalled.

**ANSWER:** Defective lighting on a Christmas tree caused a blaze which destroyed an entire business district.

Get a supply of **INDIAN FIRE PUMPS** now to protect your home, buildings and property against fire bombs. This is important!

# INDIAN
## FIRE PUMPS

And do you know that **INDIAN FIRE PUMPS** are as efficient as soda acid extinguishers? That's why more and more fire departments include them as standard equipment. Only clear water used. No recharging. *Send for descriptive catalog.*

Using **INDIAN FIRE PUMPS** on an interior home fire

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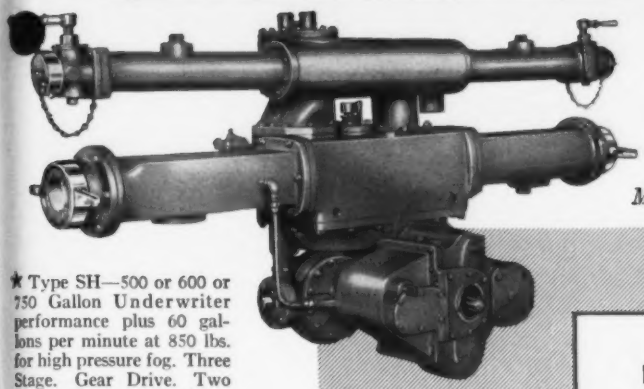
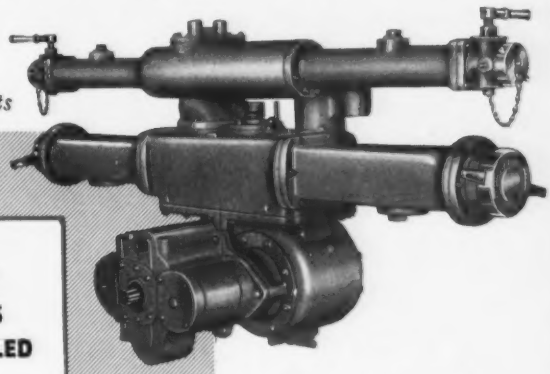
# CHAMPION FIRE PUMPS

*Write for Booklet on Fire Trucks and Pumps*



★ Type SH—500 or 600 or 750 Gallon Underwriter performance plus 60 gallons per minute at 850 lbs. for high pressure fog. Three Stage. Gear Drive. Two suction inlets, 4", 4½" or 5". Two 2½" discharge valves (3 on 750 Pump).

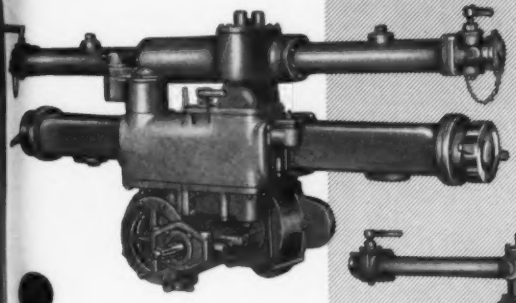
*Midship Mounts*



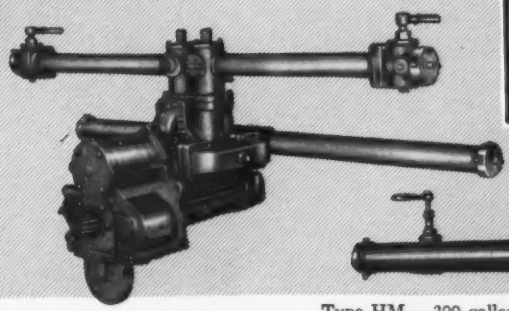
★ Type S—Capacities 500-600-750 gallons per minute at 120 lbs. pressure. Two Stage. Gear Drive. Two suction inlets, 4". 4½" or 5". Two 2½" discharge valves. (3 on 750 Pumps).

**DARLEY CHAMPIONS ARE UNEXCELLED FOR PERFORMANCE STAMINA ENGINEERING**

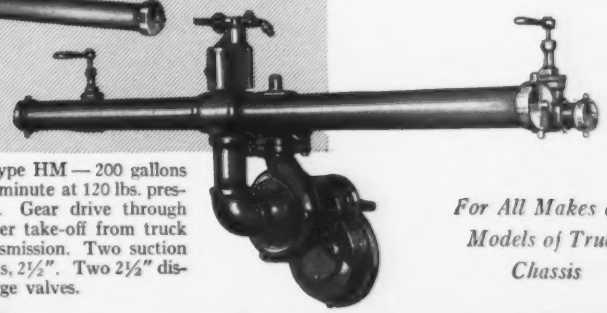
★ *Approved by National Board of Fire Underwriters and All State Insurance Bureaus*



★ Type M — Capacities 400-500 gallons at 120 lbs. Gear Drive. Two suction inlets, 3½" or 4". Two 2½" discharge valves.

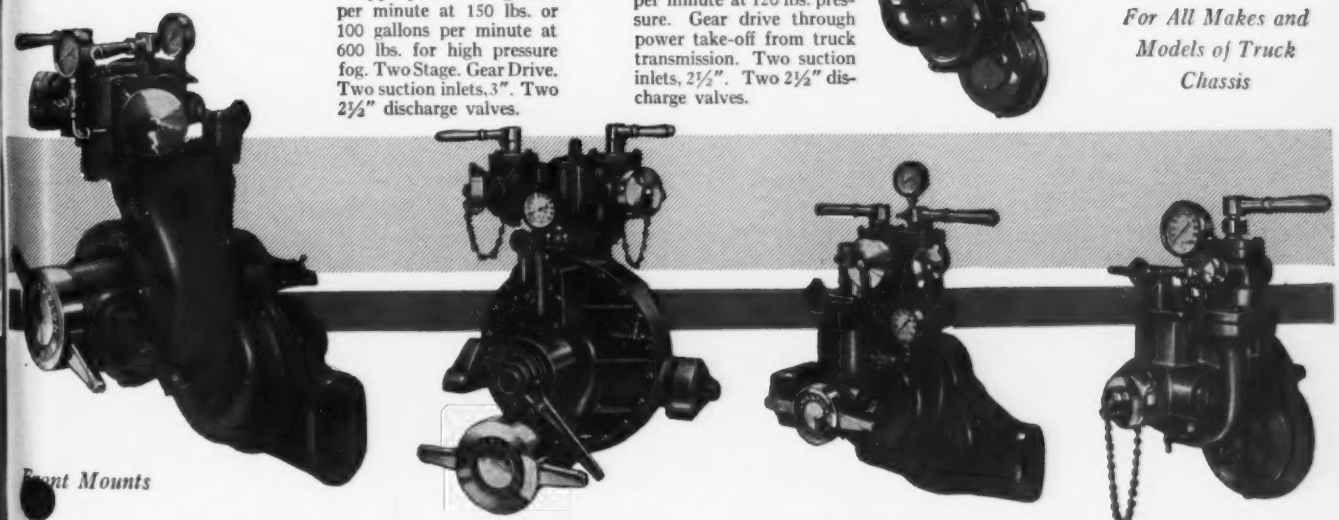


Type JMS—300 gallons per minute at 150 lbs. or 100 gallons per minute at 600 lbs. for high pressure fog. Two Stage. Gear Drive. Two suction inlets, 3". Two 2½" discharge valves.



Type HM — 200 gallons per minute at 120 lbs. pressure. Gear drive through power take-off from truck transmission. Two suction inlets, 2½". Two 2½" discharge valves.

*For All Makes and Models of Truck Chassis*



*Front Mounts*

★Type KF—Capacities 400-500-600 gallons at 120 lbs. Gear Drive. 3½", 4", 4½" suction. Two 2½" discharge valves.

★Type F — Capacities 400-500 gallons at 120 lbs. Direct Drive. 3½, 4" suction. Two 2½" discharge valves.

Type JFS—300 gallons per minute at 150 lbs. Pressures up to 1000 lbs. Two Stage. Gear Drive. 3" suction. One 2½" and two 1½" discharge valves.

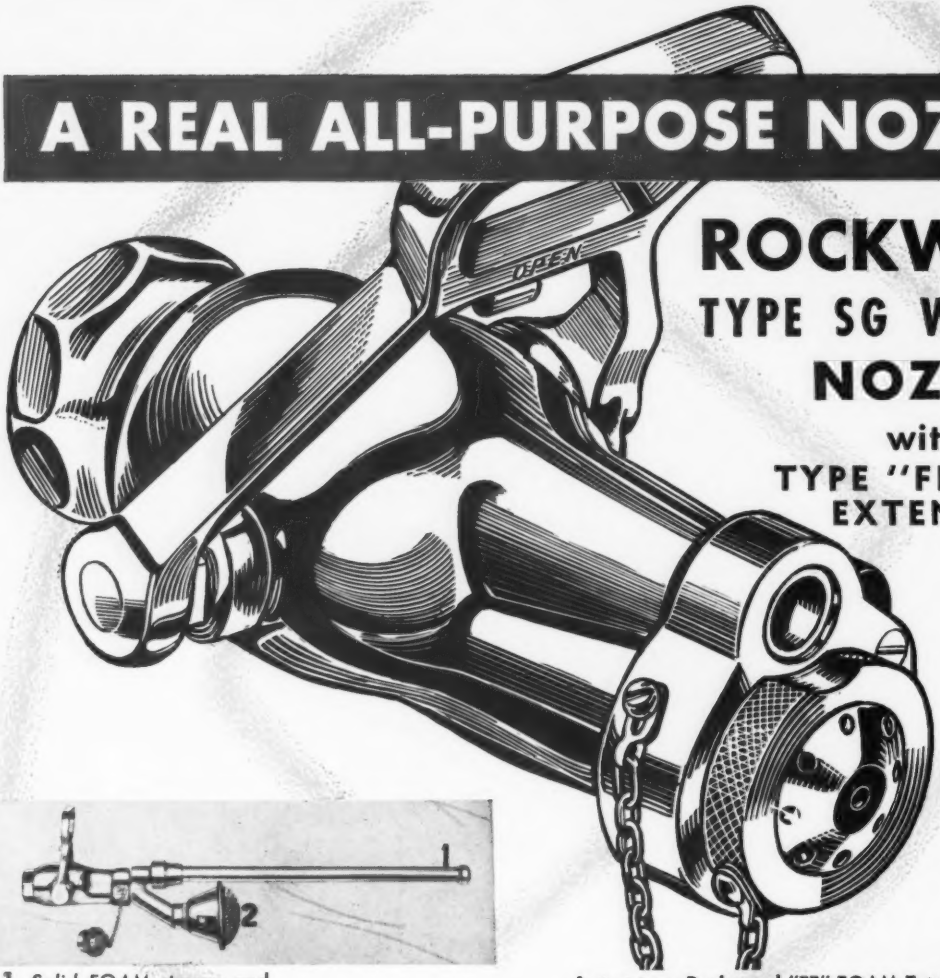
Type H—100 gallons per minute at 500 lbs. pressure. Gear Drive. 2½" suction inlet. 1½" discharge valve.

## W. S. DARLEY & CO.

Established 1908

Chicago 12

# A REAL ALL-PURPOSE NOZZLE!



## ROCKWOOD
## TYPE SG WaterFOG NOZZLE
### with TYPE "FF" FOAM EXTENSION




1 *Solid FOAM stream and*
2 *FogFOAM from "FF" FOAM extension inserted in type SG WaterFOG Nozzle.*

3 *High Velocity WaterFOG.*

4 *Straight water stream.*

5 *Low Velocity WaterFOG from extension applicator.*

Latest type Rockwood "FF" FOAM Extension unit makes possible *5 different kinds of discharge* from only one type SG WaterFOG Nozzle — (1) solid FOAM stream (2) FogFOAM (3) high velocity WaterFOG (4) solid water stream (5) low velocity WaterFOG.

This new type "FF" FOAM extension combined with our type SG WaterFOG Nozzle will handle any type of fire in ordinary combustibles, flammable liquids or materials that can be extinguished with water alone or water mixed with FOAM Liquid. These "FF" extension units are available for use with Rockwood Nozzles on ¾", 1" or 1½" fire hose lines.

Rockwood FOAM Liquid can be automatically mixed with water supplied to the new "FF" extension by means of the Rockwood hose line FOAM eductor (with SG-60 Nozzle), or the latest type Rockwood FOAM proportioning systems built into fire trucks (with type SG-47, SG-48, SG-60 Nozzles). Write for literature and prices.

*Note: Efficient use of the "FF" FOAM extension can be obtained only when used with Rockwood Nozzles.*

*Portable Fire Protection Division*

**ROCKWOOD SPRINKLER CO.**

88 HARLOW STREET WORCESTER 5, MASS.

***Rockwood WaterFOG Nozzles are approved by Underwriters' Laboratories and Factory Mutual Laboratories.***